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Introduction

CONGRATULATIONS

Congratulations on acquiring your new Ford. Please take the time to get well acquainted with your vehicle by reading this handbook. The more you know and understand about your vehicle, the greater the safety and pleasure you will derive from driving it.

For more information on Ford Motor Company and its products visit the following website:

- In the United States: www.ford.com
- In Canada: www.ford.ca
- In Mexico: www.ford.com.mx
- In Australia: www.ford.com.au

Additional owner information is given in separate publications.

This *Owner's Guide* describes every option and model variant available and therefore some of the items covered may not apply to your particular vehicle. Furthermore, due to printing cycles it may describe options before they are generally available.

Remember to pass on the *Owner's Guide* when reselling the vehicle. It is an integral part of the vehicle.

Introduction

SAFETY AND ENVIRONMENT PROTECTION

Warning symbols in this guide

How can you reduce the risk of personal injury to yourself or others? In this guide, answers to such questions are contained in comments highlighted by the warning triangle symbol. These comments should be read and observed.

Warning symbols on your vehicle

When you see this symbol, it is imperative that you consult the relevant section of this guide before touching or attempting adjustment of any kind.



Protecting the environment

We must all play our part in protecting the environment. Correct vehicle usage and the authorized disposal of waste, cleaning and lubrication materials are significant steps towards this aim. Information in this respect is highlighted in this guide with the tree symbol.



CALIFORNIA Proposition 65 Warning

 **WARNING:** Engine exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. In addition, certain fluids contained in vehicles and certain products of component wear contain or emit chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

Introduction

PERCHLORATE MATERIAL

Certain components of this vehicle such as airbag modules, seat belt pretensioners, and button cell batteries may contain Perchlorate Material – Special handling may apply for service or vehicle end of life disposal. See www.dtsc.ca.gov/hazardouswaste/perchlorate.

BREAKING-IN YOUR VEHICLE

Your vehicle does not need an extensive break-in. Try not to drive continuously at the same speed for the first 1,000 miles (1,600 km) of new vehicle operation. Vary your speed frequently in order to give the moving parts a chance to break in.

Drive your new vehicle at least 1,000 miles (1,600 km) before towing a trailer. For more detailed information about towing a trailer, refer to *Trailer towing* in the *Tires, Wheels and Loading* chapter.

Do not add friction modifier compounds or special break-in oils since these additives may prevent piston ring seating. See *Engine oil* in the *Maintenance and Specifications* chapter for more information on oil usage.

SPECIAL NOTICES

New Vehicle Limited Warranty

For a detailed description of what is covered and what is not covered by your vehicle's New Vehicle Limited Warranty, refer to the *Warranty Guide/Customer Information Guide* that is provided to you along with your *Owner's Guide*.

Service Data Recording

Service data recorders in your vehicle are capable of collecting and storing diagnostic information about your vehicle. This potentially includes information about the performance or status of various systems and modules in the vehicle, such as engine, throttle, steering or brake systems. In order to properly diagnose and service your vehicle, Ford Motor Company, Ford of Canada, and service and repair facilities may access vehicle diagnostic information through a direct connection to your vehicle when diagnosing or servicing your vehicle. For U.S. only (if equipped), if you choose to use the SYNC® Vehicle Health Report, you consent that certain diagnostic information may also be accessed electronically by Ford Motor Company and Ford authorized service facilities, and that the diagnostic information may be used for any purpose. See your *SYNC® Supplement* for more information.

Introduction

Event Data Recording

Other modules in your vehicle — event data recorders — are capable of collecting and storing data during a crash or near crash event. The recorded information may assist in the investigation of such an event. The modules may record information about both the vehicle and the occupants, potentially including information such as:

- how various systems in your vehicle were operating;
- whether or not the driver and passenger seatbelts were buckled;
- how far (if at all) the driver was depressing the accelerator and/or the brake pedal;
- how fast the vehicle was traveling; and
- where the driver was positioning the steering wheel.

To access this information, special equipment must be directly connected to the recording modules. Ford Motor Company and Ford of Canada do not access event data recorder information without obtaining consent, unless pursuant to court order or where required by law enforcement, other government authorities or other third parties acting with lawful authority. Other parties may seek to access the information independently of Ford Motor Company and Ford of Canada. Please note that once 911 Assist (if equipped) is activated by you, 911 Assist may, through any paired and connected cell phone, disclose to emergency services that the vehicle has been in a crash involving the deployment of an airbag or the activation of the fuel pump shut-off. Certain versions or updates to 911 Assist may also be capable of electronically or verbally disclosing to 911 operators the vehicle location, and/or other details about the vehicle or crash to assist 911 operators to provide the most appropriate emergency services. If you do not want to disclose this information, do not activate the feature. See your *SYNC® Supplement* for more information.

Introduction

Notice to owners of Class A Motorhome Vehicles

The Ford Motorhome Chassis is not suitable for producing ambulances or school buses. In addition, Ford urges manufacturers to follow the recommendations of the *Ford Incomplete Vehicle Manual*, *Ford Truck Body Builder's Layout Book* and other pertinent supplements.

Notification of delayed warranty start date and accumulated mileage

Verify that your authorized dealer has submitted a Notification of Delayed Warranty Start Date and Accumulated Mileage (FCS 900) to Ford Motor Company.

Introduction

These are some of the symbols you may see on your vehicle.

Vehicle Symbol Glossary

Safety Alert		See Owner's Guide	
Fasten Safety Belt		Airbag - Front	
Airbag - Side		Child Seat Lower Anchor	
Child Seat Tether Anchor		Brake System	
Anti-Lock Brake System		Parking Brake System	
Brake Fluid - Non-Petroleum Based		Parking Aid System	
Stability Control System		Speed Control	
Master Lighting Switch		Hazard Warning Flasher	
Fog Lamps-Front		Fuse Compartment	
Fuel Pump Reset		Windshield Wash/Wipe	
Windshield Defrost/Demist		Rear Window Defrost/Demist	

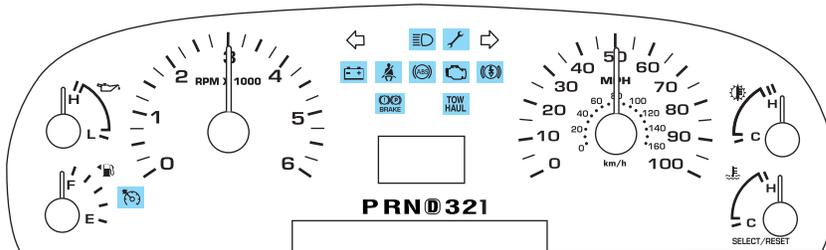
Introduction

Vehicle Symbol Glossary

Power Windows Front/Rear		Power Window Lockout	
Child Safety Door Lock/Unlock		Interior Luggage Compartment Release	
Panic Alarm		Engine Oil	
Engine Coolant		Engine Coolant Temperature	
Do Not Open When Hot		Battery	
Avoid Smoking, Flames, or Sparks		Battery Acid	
Explosive Gas		Fan Warning	
Power Steering Fluid		Maintain Correct Fluid Level	
Service Engine Soon		Engine Air Filter	
Passenger Compartment Air Filter		Jack	
Check Fuel Cap		Low Tire Pressure Warning	

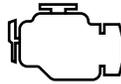
Instrument Cluster

WARNING LIGHTS AND CHIMES



Warning lights and gauges can alert you to a vehicle condition that may become serious enough to cause expensive repairs. A warning light may illuminate when a problem exists with one of your vehicle's functions. Many lights will illuminate when you start your vehicle to make sure the bulbs work. If any light remains on after starting the vehicle, refer to the respective system warning light for additional information.

Service engine soon: The *Service engine soon* indicator light illuminates when the ignition is first turned to the on position to check



the bulb and to indicate whether the vehicle is ready for Inspection/Maintenance (I/M) testing. Normally, the "Service engine soon" light will stay on until the engine is cranked, then turn itself off if no malfunctions are present. However, if after 15 seconds the "Service engine soon" light blinks eight times, it means that the vehicle is not ready for I/M testing. See the *Readiness for Inspection/Maintenance (I/M) testing* in the *Maintenance and Specifications* chapter.

Solid illumination after the engine is started indicates the On Board Diagnostics System (OBD-II) has detected a malfunction. Refer to *On board diagnostics (OBD-II)* in the *Maintenance and Specifications* chapter. If the light is blinking, engine misfire is occurring which could damage your catalytic converter. Drive in a moderate fashion (avoid heavy acceleration and deceleration) and have your vehicle serviced immediately by your authorized dealer.



WARNING: Under engine misfire conditions, excessive exhaust temperatures could damage the catalytic converter, the fuel system, interior floor coverings or other vehicle components, possibly causing a fire with the result and risk of serious personal injury.

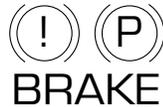
Instrument Cluster

Electronic throttle control:



Illuminates when the engine has defaulted to a “limp-home” operation. Report the fault to a dealer at the earliest opportunity.

Brake system warning light: To confirm the brake system warning light is functional, it will momentarily illuminate when the ignition is turned to the on position



when the engine is not running, or in a position between on and start, or by applying the parking brake when the ignition is turned to the on position. If the brake system warning light does not illuminate at this time, seek service immediately from your authorized dealer. Illumination after releasing the parking brake indicates low brake fluid level and the brake system should be inspected immediately by your authorized dealer.



WARNING: Driving a vehicle with the brake system warning light on is dangerous. A significant decrease in braking performance may occur. It will take you longer to stop the vehicle. Have the vehicle checked by your authorized dealer. Driving extended distances with the parking brake engaged can cause brake failure and the risk of personal injury.

Brake reserve system warning (if equipped): Illuminates to indicate normal Hydromax booster reserve system activation when the engine is off and the service brake pedal is applied.

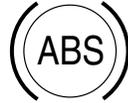
This light may also illuminate momentarily if the engine is running and the driver turns the steering wheel fully in one direction while braking.



If the light remains on while the engine is running, this indicates inadequate hydraulic booster pressure or reserve pump system failure. Stop the vehicle as soon as possible and seek service immediately by your authorized dealer.

Instrument Cluster

Anti-lock brake system: If the ABS light stays illuminated or continues to flash, a malfunction has been detected, have the system serviced immediately by your authorized dealer. Normal braking is still functional unless the brake warning light also is illuminated.



Safety belt (if equipped): Reminds you to fasten your safety belt. A Belt-Minder® chime will also sound to remind you to fasten your safety belt.



Charging system: Illuminates when the battery is not charging properly. If it stays on while the engine is running, there may be a malfunction with the charging system. Contact your authorized dealer as soon as possible. This indicates a problem with the electrical system or a related component.



Transmission Tow/Haul Feature: Illuminates when the Tow/Haul feature has been activated. Refer to the *Driving* chapter for transmission function and operation. If the light flashes steadily, have the system serviced immediately, damage to the transmission could occur.



Speed control: Illuminates when the speed control is activated. Turns off when the speed control system is deactivated.



Turn signal: Illuminates when the left or right turn signal or the hazard lights are turned on. If the indicators stay on or flash faster, check for a burned out bulb.



High beams: Illuminates when the high beam headlamps are turned on.



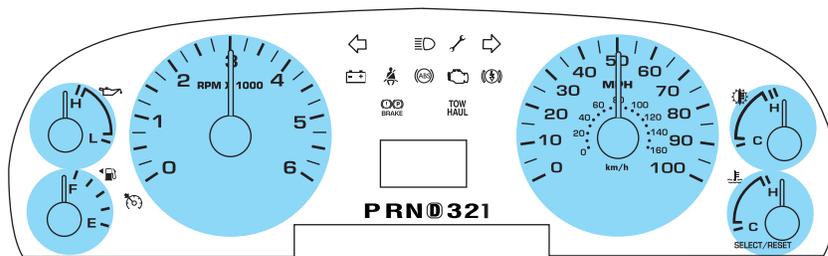
Instrument Cluster

Parking brake on warning chime: Sounds when the parking brake is set, the engine is running and the vehicle is driven more than 3 mph (5 km/h).

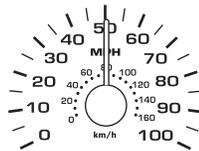
Message center activation chime: Sounds when some warning messages appear in the message center display for the first time.

Fail safe cooling warning chime: Sounds when the coolant gage pointer has moved to hot. Three one second chimes are level 1 warnings. Five one second chimes are level 2 warnings.

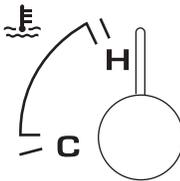
GAUGES



Speedometer: Indicates the current vehicle speed. **Vehicle speed is limited to 75 mph (120 km/h).**



Engine coolant temperature gauge: Indicates engine coolant temperature. At normal operating temperature, the needle will be in the normal range (between “H” and “C”). **If it enters the red section, the engine is overheating. Stop the vehicle as soon as safely possible, switch off the engine and let the engine cool.**



WARNING: Never remove the coolant reservoir cap while the engine is running or hot.

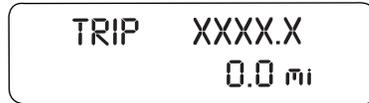
Instrument Cluster

Odometer: Registers the total miles (kilometers) of the vehicle.

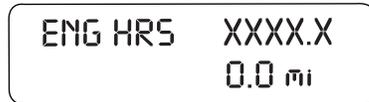


Trip odometer: Registers the miles (kilometers) of individual journeys.

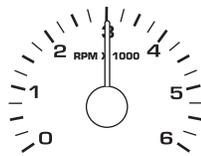
Press and release the message center INFO button until TRIP mode appears in the display. Press the RESET button to reset.



Engine hour meter: Registers the accumulated time the engine has been running. Press and release the message center INFO button until ENG HRS XXXX.X appears in the display.

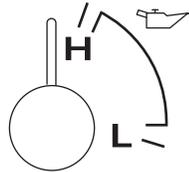


Tachometer: Indicates the engine speed in revolutions per minute. Driving with your tachometer pointer continuously at the top of the scale may damage the engine.



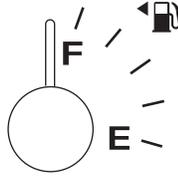
Engine oil pressure gauge:

Indicates engine oil pressure. The needle should stay in the normal operating range (between "L" and "H"). If the needle falls below the normal range, stop the vehicle, turn off the engine and check the engine oil level. Add oil if needed. If the oil level is correct, have your vehicle checked by your authorized dealer.



Instrument Cluster

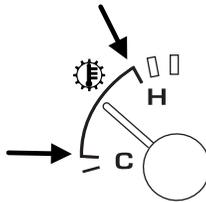
Fuel gauge: Indicates approximately how much fuel is left in the fuel tank (when the ignition is in the on position). The fuel gauge may vary slightly when the vehicle is in motion or on a grade. The FUEL icon and arrow indicates which side of the vehicle the fuel filler door is located.



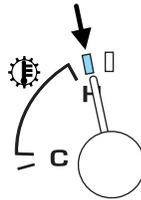
Refer to *Filling the tank* in the *Maintenance and Specifications* chapter for more information.

Transmission fluid temperature gauge: If the gauge is in the:

Normal area (normal) - the transmission fluid is within the normal operating temperature (between "H" and "C").



Yellow area (warning) — the transmission fluid is higher than normal operating temperature. This can be caused by special operation conditions (i.e. snowplowing, towing or off road use). Refer to *Special Operating Conditions* in the *scheduled maintenance*

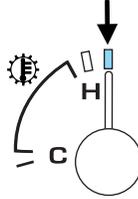


information for instructions. Operating the transmission for extended periods of time with the gauge in the yellow area may cause internal transmission damage.

Altering the severity of the driving conditions is recommended to lower the transmission temperature into the normal range.

Instrument Cluster

Red area (over temperature) — the transmission fluid is overheating. Stop the vehicle to allow the temperature to return to normal range.

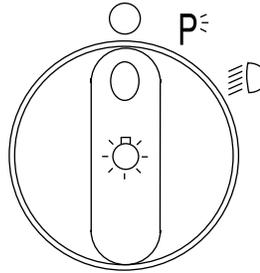


If the gauge is operating in the Yellow or Red area, stop the vehicle and verify the airflow is not restricted such as snow or debris blocking airflow through the grille. If the gauge continues to show high temperatures, see your authorized dealer.

Lights

HEADLAMP CONTROL ☼

- Turns the lamps off.
- P☼ Turns on the parking lamps, instrument panel lamps, license plate lamps and tail lamps.
- ☼ Turns the low beam headlamps on.



Daytime running lamps (DRL) (if equipped)

The daytime running light system turns the headlamps on, with a reduced light output.

To activate:

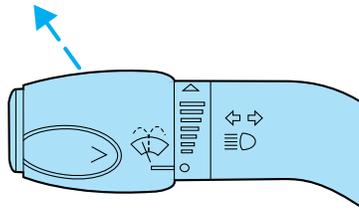
- the ignition must be in the on position and
- the headlamp system is in the off position or parking lamp position.



WARNING: Always remember to turn on your headlamps at dusk or during inclement weather. The Daytime Running Light (DRL) System does not activate your tail lamps and generally may not provide adequate lighting during these conditions. Failure to activate your headlamps under these conditions may result in a collision.

High beams ☼D

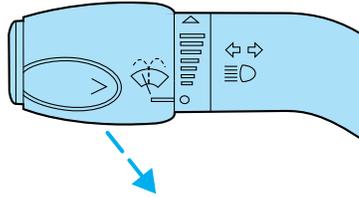
Push the lever toward the instrument panel to activate. Pull the lever towards you to deactivate.



Lights

Flash to pass

Pull toward you slightly to activate and release to deactivate.



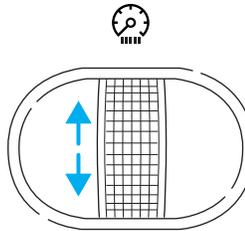
PANEL DIMMER CONTROL

Use to adjust the brightness of the instrument panel and all applicable switches in the vehicle during headlamp and parking lamp operation.

Move the control up or down to adjust the intensity of the panel lighting.

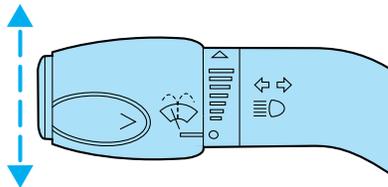
Move the control to the full upright position, past detent, to turn on the interior lamps.

Note: If the battery is disconnected, discharged, or a new battery is installed, the dimmer switch requires re-calibration. Rotate the dimmer switch from the full dim position to the full dome/on position to reset. This will ensure that your displays are visible under all lighting conditions.



TURN SIGNAL CONTROL ⇄

- Push down to activate the left turn signal.
- Push up to activate the right turn signal.



BULB REPLACEMENT

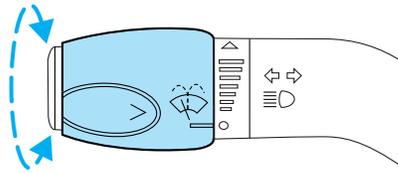
Replacing exterior bulbs

Check the operation of all the bulbs frequently.

Driver Controls

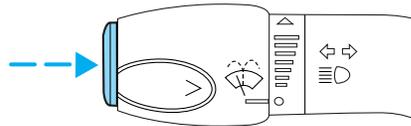
MULTI-FUNCTION LEVER

Windshield wiper: Rotate the end of the control away from you to increase the speed of the wipers; rotate towards you to decrease the speed of the wipers.



Windshield washer: Push the end of the stalk:

- briefly: causes three swipes of the wipers without washer fluid.
- a quick push and hold: the wipers will swipe four times with washer fluid.
- a long push and hold: the wipers and washer fluid will be activated for up to ten seconds.

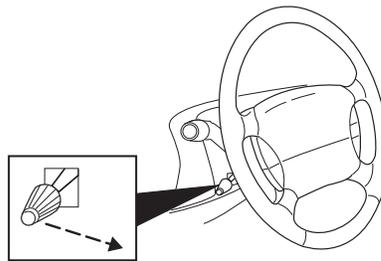


Note: Do not operate the washer when the washer reservoir is empty. This may cause the washer pump to overheat. Check the washer fluid level frequently. Do not operate the wipers when the windshield is dry. This may scratch the glass, damage the wiper blades and cause the wiper motor to burn out. Before operating the wiper on a dry windshield, always use the windshield washer. In freezing weather, be sure the wiper blades are not frozen to the windshield before operating the wipers.

TILT STEERING WHEEL (IF EQUIPPED)

To adjust the steering wheel:

1. Pull and hold the steering wheel release control toward you.
2. Move the steering wheel up or down until you find the desired location.
3. Release the steering wheel release control. This will lock the steering wheel in position.



WARNING: Never adjust the steering wheel when the vehicle is moving.

Driver Controls

SPEED CONTROL (IF EQUIPPED)

With speed control set, you can maintain a set speed without keeping your foot on the accelerator pedal.



WARNING: Do not use the speed control in heavy traffic or on roads that are winding, slippery or unpaved.

Setting speed control

The controls for using your speed control are located on the steering wheel for your convenience.

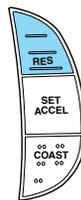
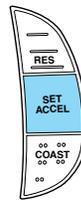
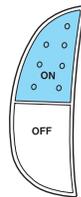
1. Press the ON control and release it.
2. Accelerate to the desired speed.
3. Press the SET ACCEL control and release it.
4. Take your foot off the accelerator pedal.

Note:

- Vehicle speed may vary momentarily when driving up and down a steep hill.
- If the vehicle speed increases above the set speed on a downhill, you may want to apply the brakes to reduce the speed.
- If the vehicle speed decreases more than 10 mph (16 km/h) below your set speed on an uphill, your speed control will disengage.

Resuming a set speed

Press the RES (resume) control and release it. This will automatically return the vehicle to the previously set speed.



Driver Controls

Increasing speed while using speed control

There are two ways to set a higher speed:

- Press and hold the SET ACCEL control until you get to the desired speed, then release the control. You can also use the SET ACCEL control to operate the Tap-Up function. Press and release this control to increase the vehicle set speed in increments by 1 mph (1.6 km/h).
- Use the accelerator pedal to get to the desired speed. When the vehicle reaches that speed press and release the SET ACCEL control.



Reducing speed while using speed control

There are two ways to reduce a set speed:

- Press and hold the COAST control until you get to the desired speed, then release the control. You can also use the COAST control to operate the Tap-Down function. Press and release this control to decrease the vehicle set speed in increments by 1 mph (1.6 km/h).
- Depress the brake pedal until the desired vehicle speed is reached, press the SET ACCEL control.

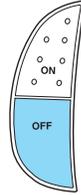


Driver Controls

Turning off speed control

There are two ways to turn off the speed control:

- Depress the brake pedal. This will not erase your vehicle's previously set speed.
- Press the speed control OFF control.



Note: When you turn off the speed control or the ignition, your speed control set speed memory is erased.

MESSAGE CENTER

With the ignition in the on position, the message center, located on your instrument cluster, displays important vehicle information

through a constant monitor of vehicle systems. You may select

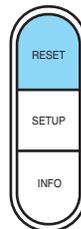
display features on the message center for a display of status preceded by a brief indicator chime. The system will also notify you of potential vehicle problems with a display of system warnings followed by a long indicator chime.



Selectable features

Reset

Press this control to select and reset functions shown in the INFO menu and SETUP menu.

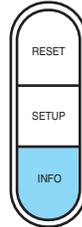


Driver Controls

Info menu

This control displays the following control displays:

- Trip odometer/Odometer
- Outside temperature/Odometer
- Distance to Empty/Odometer (if equipped)
- Average Fuel Economy/Odometer
- Engine hour meter/Odometer



Odometer/Trip odometer

Refer to *Gauges* in the *Instrument Cluster* chapter.

Outside air temperature

Selecting this function from the INFO button displays the outside temperature.



Distance to empty (DTE) (if equipped)

Selecting this function from the INFO menu estimates approximately how far you can drive with the fuel remaining in your tank under normal driving conditions.

Remember to turn the ignition off when refueling to allow this feature to correctly detect the added fuel.

The DTE function will display FUEL LEVEL LOW and sound a tone for one second when you have approximately 50 miles (80 km) to empty. If you RESET this warning message, this display and tone will return within 10 minutes.

DTE is calculated using a running average fuel economy, which is based on your recent driving history of 500 miles (800 km). This value is not the same as the average fuel economy display. The running average fuel economy is reinitialized to a factory default value if the battery is disconnected.



Driver Controls

Average fuel economy (AFE)

Select this function from the INFO menu to display your average fuel economy in miles/gallon or liters/100 km.



If you calculate your average fuel economy by dividing gallons of fuel used by 100 miles traveled (kilometers traveled by liters used), your figure may be different than displayed for the following reasons:

- Your vehicle was not perfectly level during fill-up
- Differences in the automatic shut-off points on the fuel pumps at service stations
- Variations in top-off procedure from one fill-up to another
- Rounding of the displayed values to the nearest 0.1 gallon (liter)

1. Drive the vehicle at least 5 miles (8 km) with the speed control system engaged to display a stabilized average.

2. Record the highway fuel economy for future reference.

It is important to press the RESET control after setting the speed control to get accurate highway fuel economy readings.

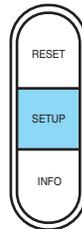
Engine hour meter

Refer to *Gauges* in the *Instrument Cluster* chapter.

Setup menu

Press this control for the following displays:

- System Check
- Units (English/Metric)
- Language



Driver Controls

System check

Selecting this function from the SETUP menu causes the message center to cycle through each of the systems being monitored. For each of the monitored systems, the message center will indicate either an OK message or a warning message for three seconds.

PRESS RESET
FOR SYS CHECK

Pressing the RESET control cycles the message center through each of the systems being monitored.

The sequence of the system check report and how it appears in the message center is as follows:

1. ENGINE TEMP
2. TRANS TEMP
3. OIL PRESSURE
4. BRAKE FLUID LEVEL
5. FUEL LEVEL (if equipped)

Units (English/Metric)

1. Select this function from the SETUP menu for the current units to be displayed.
2. Press the RESET control to change from English to Metric.

UNITS
< ENG > METRIC

Language

1. Select this function from the SETUP menu for the current language to be displayed.
2. Pressing the RESET control cycles the message center through each of the language choices.

ENGLISH
RESET FOR NEW

FOR ENGLISH
HOLD RESET

Driver Controls

3. Press and hold the RESET control to set the language choice.

SET TO
ENGLISH

System warnings

System warnings alert you to possible problems or malfunctions in your vehicle's operating systems.

In the event of a multiple warning situation, the message center will cycle the display to show all warnings by displaying each one for four seconds.

The message center will display the last selected feature if there are no more warning messages. This allows you to use the full functionality of the message center after you acknowledge the warning by pressing the RESET control and clearing the warning message.

Warning messages that have been reset are divided into two categories:

- They will not disappear until a condition is changed.
- They will reappear on the display 10 minutes from the reset.

This acts as a reminder that these warning conditions still exist within the vehicle.

Warning display	Status
Reduced engine power	Warning cannot be reset
Stop engine safely	
Fuel level low	Warning returns after 10 minutes
Brake fluid level low	
Low oil pressure	
Check engine temperature	
Check trans temperature	



WARNING: Never remove the coolant reservoir cap while the engine is running or hot.

REDUCED ENGINE POWER. Displayed when the engine is overheating. Stop the vehicle as soon as safely possible, turn off the engine. If the warning stays on followed by an indicator chime or continues to come on, contact your authorized dealer as soon as possible.

Driver Controls

STOP ENGINE SAFELY. Displayed when the engine is overheating. Stop the vehicle as soon as safely possible, turn off the engine. If the warning stays on followed by an indicator chime or continues to come on, contact your authorized dealer as soon as possible.

FUEL LEVEL LOW. Displayed as an early reminder of a low fuel condition.

BRAKE FLUID LEVEL LOW. Indicates the brake fluid level is low and the brake system should be inspected immediately. Refer to *Brake fluid* in the *Maintenance and Specifications* chapter.

LOW OIL PRESSURE. Displayed when the engine oil pressure is low. If this warning message is displayed, check the level of the engine oil. Refer to *Engine oil* in the *Maintenance and Specifications* chapter for information about adding engine oil. If the oil level is OK and this warning persists, shut down the engine immediately and contact your authorized dealer as soon as possible.

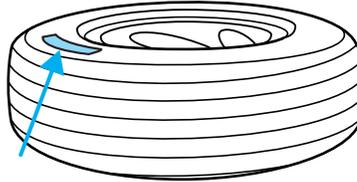
CHECK ENGINE TEMPERATURE. Displayed when the engine coolant is overheating. Stop the vehicle as soon as safely possible, turn off the engine and let it cool. Check the coolant and coolant level. Refer to *Engine coolant* in the *Maintenance and Specifications* chapter. If the warning stays on or continues to come on, contact your authorized dealer as soon as possible.

CHECK TRANS TEMPERATURE. Displayed when the transmission fluid is overheating. This warning may appear when towing heavy loads or when driving in a low gear at a high speed for an extended period of time. Stop the vehicle as soon as safely possible, turn off the engine and let the transmission cool. Refer to *Transmission fluid* in the *Maintenance and Specifications* chapter.

Tires, Wheels and Loading

INFORMATION ABOUT UNIFORM TIRE QUALITY GRADING

Tire Quality Grades apply to new pneumatic passenger car tires. The Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width. For example:



- **Treadwear 200 Traction AA Temperature A**

These Tire Quality Grades are determined by standards that the United States Department of Transportation has set.

Tire Quality Grades apply to new pneumatic passenger car tires. They do not apply to deep tread, winter-type snow tires, space-saver or temporary use spare tires, light truck or "LT" type tires, tires with nominal rim diameters of 10 to 12 inches or limited production tires as defined in Title 49 Code of Federal Regulations Part 575.104(c)(2).

U.S. Department of Transportation-Tire quality grades: The U.S. Department of Transportation requires Ford Motor Company to give you the following information about tire grades exactly as the government has written it.

Treadwear

The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half ($1\frac{1}{2}$) times as well on the government course as a tire graded 100. The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices, and differences in road characteristics and climate.

Traction AA A B C

The traction grades, from highest to lowest are AA, A, B, and C. The grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

Tires, Wheels and Loading



WARNING: The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning or peak traction characteristics.

Temperature A B C

The temperature grades are A (the highest), B and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel. Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. The grade C corresponds to a level of performance which all passenger car tires must meet under the Federal Motor Vehicle Safety Standard No. 139. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.



WARNING: The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, underinflation, or excessive loading, either separately or in combination, can cause heat buildup and possible tire failure.

TIRES

Tires are designed to give many thousands of miles of service, but they must be maintained in order to get the maximum benefit from them.

Glossary of tire terminology

- **Tire label:** A label showing the OE (Original Equipment) tire sizes, recommended inflation pressure and the maximum weight the vehicle can carry.
- **Tire Identification Number (TIN):** A number on the sidewall of each tire providing information about the tire brand and manufacturing plant, tire size and date of manufacture. Also referred to as DOT code.
- **Inflation pressure:** A measure of the amount of air in a tire.
- **Standard load:** A class of P-metric or Metric tires designed to carry a maximum load at 35 psi [37 psi (2.5 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tire's load carrying capability.

Tires, Wheels and Loading

- **Extra load:** A class of P-metric or Metric tires designed to carry a heavier maximum load at 41 psi [43 psi (2.9 bar) for Metric tires]. Increasing the inflation pressure beyond this pressure will not increase the tire's load carrying capability.
- **kPa:** Kilopascal, a metric unit of air pressure.
- **PSI:** Pounds per square inch, a standard unit of air pressure.
- **Cold inflation pressure:** The tire pressure when the vehicle has been stationary and out of direct sunlight for an hour or more and prior to the vehicle being driven for 1 mile (1.6 km).
- **Recommended inflation pressure:** The cold inflation pressure found on the Safety Compliance Certification Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label.
- **Bead area of the tire:** Area of the tire next to the rim.
- **Sidewall of the tire:** Area between the bead area and the tread.
- **Tread area of the tire:** Area of the perimeter of the tire that contacts the road when mounted on the vehicle.
- **Rim:** The metal support (wheel) for a tire or a tire and tube assembly upon which the tire beads are seated.

INFLATING YOUR TIRES

Safe operation of your vehicle requires that your tires are properly inflated. Every day before you drive, check your tires. If one looks lower than the others, use a tire gauge to check pressure of all tires and adjust if required. Remember that a tire can lose up to half of its air pressure without appearing flat.

At least once a month and before long trips, inspect each tire and check the tire pressure with a tire gauge (including spare, if equipped). Inflate all tires to the inflation pressure recommended by Ford Motor Company.

You are strongly urged to buy a reliable tire pressure gauge, as automatic service station gauges may be inaccurate. Ford recommends the use of a digital or dial type tire pressure gauge rather than a stick type tire pressure gauge.

Use the recommended cold inflation pressure for optimum tire performance and wear. Under-inflation or over-inflation may cause uneven treadwear patterns.

Tires, Wheels and Loading



WARNING: Under-inflation is the most common cause of tire failures and may result in severe tire cracking, tread separation or "blowout", with unexpected loss of vehicle control and increased risk of injury. Under-inflation increases sidewall flexing and rolling resistance, resulting in heat buildup and internal damage to the tire. It also may result in unnecessary tire stress, irregular wear, loss of vehicle control and accidents. A tire can lose up to half of its air pressure and not appear to be flat!

Always inflate your tires to the Ford recommended inflation pressure even if it is less than the maximum inflation pressure information found on the tire. The Ford recommended tire inflation pressure is found on the Safety Compliance Certification Label or Tire Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label or Tire Label. Failure to follow the tire pressure recommendations can cause uneven treadwear patterns and adversely affect the way your vehicle handles.

Maximum Permissible Inflation Pressure is the tire manufacturer's maximum permissible pressure and/or the pressure at which the maximum load can be carried by the tire. This pressure is normally higher than the manufacturer's recommended cold inflation pressure which can be found on the Safety Compliance Certification Label or Tire Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label or Tire Label. The cold inflation pressure should never be set lower than the recommended pressure on the Safety Compliance Certification Label or Tire Label.

When weather temperature changes occur, tire inflation pressures also change. A 10° F (6° C) temperature drop can cause a corresponding drop of 1 psi (7 kPa) in inflation pressure. Check your tire pressures frequently and adjust them to the proper pressure which can be found on the Safety Compliance Certification Label or Tire Label.

To check the pressure in your tire(s):

1. Make sure the tires are cool, meaning they are not hot from driving even a mile.

If you are checking tire pressure when the tire is hot, (i.e. driven more than 1 mile [1.6 km]), never "bleed" or reduce air pressure. The tires are hot from driving and it is normal for pressures to increase above recommended cold pressures. A hot tire at or below recommended cold inflation pressure could be significantly under-inflated.

Tires, Wheels and Loading

Note: If you have to drive a distance to get air for your tire(s), check and record the tire pressure first and add the appropriate air pressure when you get to the pump. It is normal for tires to heat up and the air pressure inside to go up as you drive.

2. Remove the cap from the valve on one tire, then firmly press the tire gauge onto the valve and measure the pressure with the tire gauge.

3. Add enough air to reach the recommended air pressure

Note: If you overfill the tire, release air by pushing on the metal stem in the center of the valve. Then recheck the pressure with your tire gauge.

4. Replace the valve cap.

5. Repeat this procedure for each tire, including the spare.

Note: Some spare tires operate at a higher inflation pressure than the other tires. For T-type/mini-spare tires (see *T-Type/Mini-Spare Tire Information* section for description): Store and maintain at 60 psi (4.15 bars). For Full Size and Dissimilar spare tires (see *Dissimilar Spare Tire/Wheel Information* section for description): Store and maintain at the higher of the front and rear inflation pressure as shown on Safety Compliance Certification Label or the Tire Label.

6. Visually inspect the tires to make sure there are no nails or other objects embedded that could poke a hole in the tire and cause an air leak.

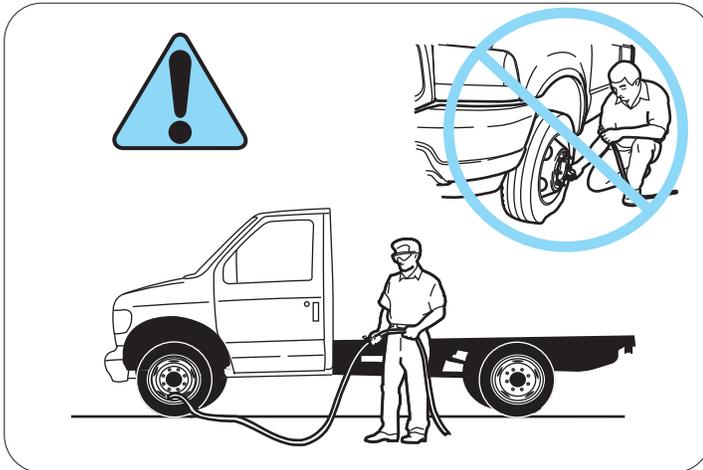
7. Check the sidewalls to make sure there are no gouges, cuts or bulges.

Tires, Wheels and Loading

Tire inflation information

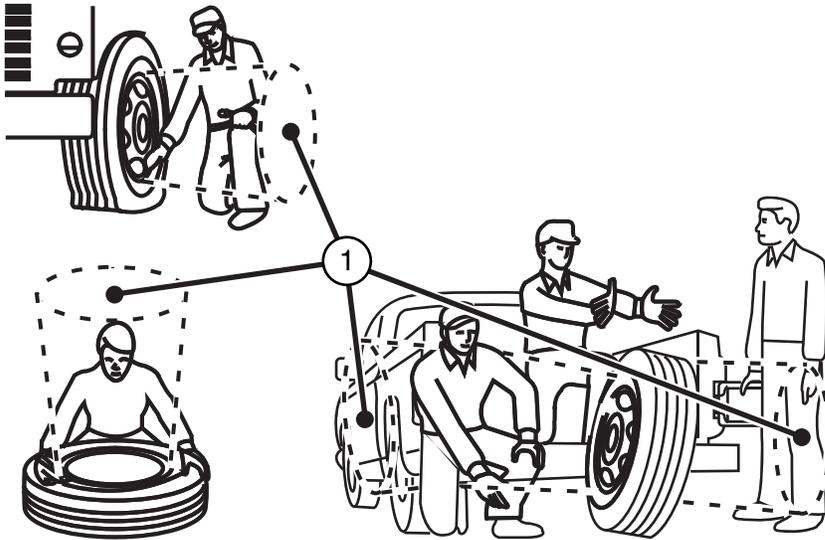
All tires with Steel Carcass Plies (if equipped):

This type of tire utilizes steel cords in the sidewalls. As such, they cannot be treated like normal light truck tires. Tire service, including adjusting tire pressure, must be performed by personnel trained, supervised and equipped according to Federal Occupational Safety and Health Administration (OSHA) regulations. For example, during any procedure involving tire inflation, the technician or individual must utilize a remote inflation device, and ensure that all persons are clear of the trajectory area.



 **WARNING:** An inflated tire and rim can be very dangerous if improperly used, serviced or maintained. To reduce the risk of serious injury, never attempt to re-inflate a tire which has been run flat or seriously under-inflated without first removing the tire from the wheel assembly for inspection. Do not attempt to add air to tires or replace tires or wheels without first taking precautions to protect persons and property.

Tires, Wheels and Loading



WARNING: Stay out of the trajectory (1) as indicated in the illustration.

TIRE CARE

Inspecting your tires

Periodically inspect the tire treads for uneven or excessive wear and remove objects such as stones, nails or glass that may be wedged in the tread grooves. Check for holes or cuts that may permit air leakage from the tire and make necessary repairs. Also inspect the tire sidewalls for cracking, cuts, bruises and other signs of damage or excessive wear. If internal damage to the tire is suspected, have the tire demounted and inspected in case it needs to be repaired or replaced. For your safety, tires that are damaged or show signs of excessive wear should not be used because they are more likely to blow out or fail.

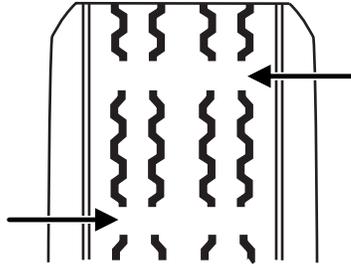
Tires, Wheels and Loading

Improper or inadequate vehicle maintenance can cause tires to wear abnormally. Inspect all your tires, including the spare, frequently, and replace them if one or more of the following conditions exist:

Tire wear

When the tread is worn down to 1/16th of an inch (2 mm), tires must be replaced to help prevent your vehicle from skidding and hydroplaning. Built-in treadwear indicators, or “wear bars”, which look like narrow strips of smooth rubber across the tread will appear on the tire when the tread is worn down to 1/16th of an inch (2 mm).

When the tire tread wears down to the same height as these “wear bars”, the tire is worn out and must be replaced.



Damage

Periodically inspect the tire treads and sidewalls for damage (such as bulges in the tread or sidewalls, cracks in the tread groove and separation in the tread or sidewall). If damage is observed or suspected have the tire inspected by a tire professional. Tires can be damaged during off-road use, so inspection after off-road use is also recommended.



WARNING: Age

Tires degrade over time depending on many factors such as weather, storage conditions, and conditions of use (load, speed, inflation pressure, etc.) the tires experience throughout their lives. In general, tires should be replaced after six years regardless of tread wear. However, heat caused by hot climates or frequent high loading conditions can accelerate the aging process and may require tires to be replaced more frequently.

You should replace your spare tire when you replace the road tires or after six years due to aging even if it has not been used.

Tires, Wheels and Loading

U.S. DOT Tire Identification Number (TIN)

Both U.S. and Canada Federal regulations require tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a U.S. DOT Tire Identification Number for safety standard certification and in case of a recall.

This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code designating where it was manufactured, the next two are the tire size code and the last four numbers represent the week and year the tire was built. For example, the numbers 317 mean the 31st week of 1997. After 2000 the numbers go to four digits. For example, 2501 means the 25th week of 2001. The numbers in between are identification codes used for traceability. This information is used to contact customers if a tire defect requires a recall.

Tire Replacement Requirements

Your vehicle is equipped with tires designed to provide a safe ride and handling capability.



WARNING: Only use replacement tires and wheels that are the same size, load index, speed rating and type (such as P-metric versus LT-metric or all-season versus all-terrain) as those originally provided by Ford. The recommended tire and wheel size may be found on either the Safety Compliance Certification Label or the Tire Label which is located on the B-Pillar or edge of the driver's door. If this information is not found on these labels then you should contact your authorized dealer as soon as possible. Use of any tire or wheel not recommended by Ford can affect the safety and performance of your vehicle, which could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death. Additionally the use of non-recommended tires and wheels could cause steering, suspension, axle or transfer case/power transfer unit failure. If you have questions regarding tire replacement, contact your authorized dealer as soon as possible.

Tires, Wheels and Loading



WARNING: When mounting replacement tires and wheels, you should not exceed the maximum pressure indicated on the sidewall of the tire to set the beads without additional precautions listed below. If the beads do not seat at the maximum pressure indicated, re-lubricate and try again.

When inflating the tire for mounting pressures up to 20 psi greater than the maximum pressure on the tire sidewall, the following precautions must be taken to protect the person mounting the tire:

- 1. Make sure that you have the correct tire and wheel size.**
- 2. Lubricate the tire bead and wheel bead seat area again.**
- 3. Stand at a minimum of 12 ft. (3.66 m) away from the tire wheel assembly.**
- 4. Use both eye and ear protection.**

For a mounting pressure more than 20 psi greater than the maximum pressure, a Ford Dealer or other tire service professional should do the mounting.

Always inflate steel carcass tires with a remote air fill with the person inflating standing at a minimum of 12 ft. (3.66 m) away from the tire wheel assembly.

Important: Remember to replace the wheel valve stems when the road tires are replaced on your vehicle.

It is recommended that the two front tires or two rear tires generally be replaced as a pair.

The tire pressure sensors mounted in the wheels (if equipped) are not designed to be used in aftermarket wheels.

The use of wheels or tires not recommended by Ford Motor Company may affect the operation of your Tire Pressure Monitoring System (if equipped).

If the TPMS indicator is flashing, your TPMS is malfunctioning. Your replacement tire might be incompatible with your TPMS, or some component of the TPMS may be damaged (if equipped).

Safety practices

Driving habits have a great deal to do with your tire mileage and safety.

- Observe posted speed limits
- Avoid fast starts, stops and turns
- Avoid potholes and objects on the road
- Do not run over curbs or hit the tire against a curb when parking

Tires, Wheels and Loading



WARNING: If your vehicle is stuck in snow, mud, sand, etc., **do not** rapidly spin the tires; spinning the tires can tear the tire and cause an explosion. A tire can explode in as little as three to five seconds.



WARNING: Do not spin the wheels at over 35 mph (56 km/h). The tires may fail and injure a passenger or bystander.

Highway hazards

No matter how carefully you drive there's always the possibility that you may eventually have a flat tire on the highway. Drive slowly to the closest safe area out of traffic. This may further damage the flat tire, but your safety is more important.

If you feel a sudden vibration or ride disturbance while driving, or you suspect your tire or vehicle has been damaged, immediately reduce your speed. Drive with caution until you can safely pull off the road. Stop and inspect the tires for damage. If a tire is under-inflated or damaged, deflate it, remove wheel and replace it with your spare tire and wheel. If you cannot detect a cause, have the vehicle towed to the nearest repair facility or tire dealer to have the vehicle inspected.

Tire and wheel alignment

A bad jolt from hitting a curb or pothole can cause the front end of your vehicle to become misaligned or cause damage to your tires. If your vehicle seems to pull to one side when you're driving, the wheels may be out of alignment. Have an authorized dealer check the wheel alignment periodically.

Wheel misalignment in the front or the rear can cause uneven and rapid treadwear of your tires and should be corrected by an authorized dealer. Front wheel drive (FWD) vehicles and those with an independent rear suspension (if equipped) may require alignment of all four wheels.

The tires should also be balanced periodically. An unbalanced tire and wheel assembly may result in irregular tire wear.

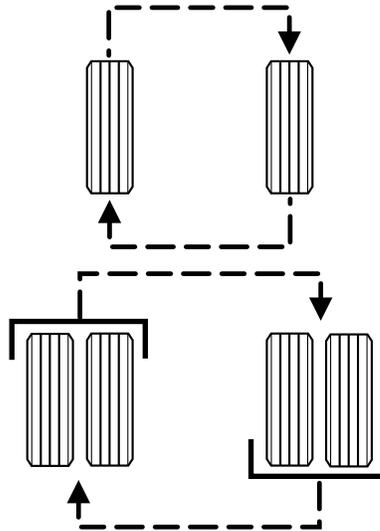
Tire rotation

Rotating your tires at the recommended interval (as indicated in the *scheduled maintenance information* that comes with your vehicle) will help your tires wear more evenly, providing better tire performance and longer tire life.

Tires, Wheels and Loading

- DRW – Six tire rotation

If your vehicle is equipped with dual rear wheels it is recommended that the front and rear tires (in pairs) be rotated only side to side. We do not recommend splitting up the dual rear wheels. Rotate them side to side as a set/pair. After tire rotation, inflation pressures must be adjusted for the tires new positions in accordance with vehicle requirements.



Sometimes irregular tire wear can be corrected by rotating the tires.

Note: If your tires show uneven wear ask an authorized dealer to check for and correct any wheel misalignment, tire imbalance or mechanical problem involved before tire rotation.

Note: Your vehicle may be equipped with a dissimilar spare tire/wheel. A dissimilar spare tire/wheel is defined as a spare tire and/or wheel that is different in brand, size or appearance from the road tires and wheels. If you have a dissimilar spare tire/wheel it is intended for temporary use only and should not be used in a tire rotation.

Note: After having your tires rotated, inflation pressure must be checked and adjusted to the vehicle requirements.

INFORMATION CONTAINED ON THE TIRE SIDEWALL

Both U.S. and Canada Federal regulations require tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a U.S. DOT Tire Identification Number for safety standard certification and in case of a recall.

Tires, Wheels and Loading

Information on “P” type tires

P215/65R15 95H is an example of a tire size, load index and speed rating. The definitions of these items are listed below. (Note that the tire size, load index and speed rating for your vehicle may be different from this example.)

1. **P:** Indicates a tire, designated by the Tire and Rim Association (T&RA), that may be used for service on cars, SUVs, minivans and light trucks.

Note: If your tire size does not begin with a letter this may mean it is designated by either ETRTO (European Tire and Rim Technical Organization) or JATMA (Japan Tire Manufacturing Association).

2. **215:** Indicates the nominal width of the tire in millimeters from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

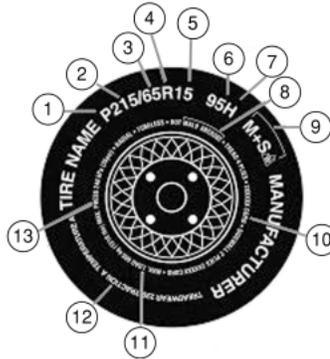
3. **65:** Indicates the aspect ratio which gives the tire’s ratio of height to width.

4. **R:** Indicates a “radial” type tire.

5. **15:** Indicates the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

6. **95:** Indicates the tire’s load index. It is an index that relates to how much weight a tire can carry. You may find this information in your *Owner’s Guide*. If not, contact a local tire dealer.

Note: You may not find this information on all tires because it is not required by federal law.



Tires, Wheels and Loading

7. **H:** Indicates the tire's speed rating. The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time under a standard condition of load and inflation pressure. The tires on your vehicle may operate at different conditions for load and inflation pressure. These speed ratings may need to be adjusted for the difference in conditions. The ratings range from 81 mph (130 km/h) to 186 mph (299 km/h). These ratings are listed in the following chart.

Note: You may not find this information on all tires because it is not required by federal law.

Letter rating	Speed rating - mph (km/h)
M	81 mph (130 km/h)
N	87 mph (140 km/h)
Q	99 mph (159 km/h)
R	106 mph (171 km/h)
S	112 mph (180 km/h)
T	118 mph (190 km/h)
U	124 mph (200 km/h)
H	130 mph (210 km/h)
V	149 mph (240 km/h)
W	168 mph (270 km/h)
Y	186 mph (299 km/h)

Note: For tires with a maximum speed capability over 149 mph (240 km/h), tire manufacturers sometimes use the letters ZR. For those with a maximum speed capability over 186 mph (299 km/h), tire manufacturers always use the letters ZR.

This vehicle is speed limited to 75 mph (120 km/h).

8. **U.S. DOT Tire Identification Number (TIN):** This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code designating where it was manufactured, the next two are the tire size code and the last four numbers represent the week and year the tire was built. For example, the numbers 317 mean the 31st week of 1997. After 2000 the numbers go to four digits. For example, 2501 means the 25th week of 2001. The numbers in between are identification codes used for traceability. This information is used to contact customers if a tire defect requires a recall.

Tires, Wheels and Loading

9. **M+S or M/S:** Mud and Snow, or

AT: All Terrain, or

AS: All Season.

10. **Tire Ply Composition and Material Used:** Indicates the number of plies or the number of layers of rubber-coated fabric in the tire tread and sidewall. Tire manufacturers also must indicate the ply materials in the tire and the sidewall, which include steel, nylon, polyester, and others.

11. **Maximum Load:** Indicates the maximum load in kilograms and pounds that can be carried by the tire. Refer to the Safety Compliance Certification Label for the correct tire pressure for your vehicle. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label.

12. Treadwear, Traction and Temperature Grades

- **Treadwear:** The treadwear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one and one-half (1½) times as well on the government course as a tire graded 100.
- **Traction:** The traction grades, from highest to lowest are AA, A, B, and C. The grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.
- **Temperature:** The temperature grades are A (the highest), B and C, representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

13. **Maximum Permissible Inflation Pressure:** Indicates the tire manufacturers' maximum permissible pressure and/or the pressure at which the maximum load can be carried by the tire. This pressure is normally higher than the manufacturer's recommended cold inflation pressure which can be found on either the Safety Compliance Certification Label. See the completed vehicle's owner's guide for the location of the Safety Compliance Certification Label. The cold inflation pressure should never be set lower than the recommended pressure on the vehicle label.

The tire suppliers may have additional markings, notes or warnings such as standard load, radial tubeless, etc.

Tires, Wheels and Loading

Additional information contained on the tire sidewall for “LT” type tires

“LT” type tires have some additional information beyond those of “P” type tires; these differences are described below.

Note: Tire Quality Grades do not apply to this type of tire.

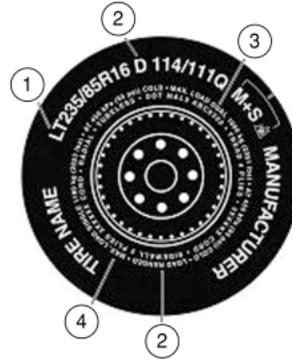
1. **LT:** Indicates a tire, designated by the Tire and Rim Association (T&RA), that is intended for service on light trucks.

2. Load Range/Load Inflation

Limits: Indicates the tire’s load-carrying capabilities and its inflation limits.

3. **Maximum Load Dual lb. (kg) at psi (kPa) cold:** Indicates the maximum load and tire pressure when the tire is used as a dual; defined as four tires on the rear axle (a total of six or more tires on the vehicle).

4. **Maximum Load Single lb. (kg) at psi (kPa) cold:** Indicates the maximum load and tire pressure when the tire is used as a single; defined as two tires (total) on the rear axle.



Tires, Wheels and Loading

Information on “T” type tires

“T” type tires have some additional information beyond those of “P” type tires; these differences are described below:

T145/80D16 is an example of a tire size.

Note: The temporary tire size for your vehicle may be different from this example. Tire Quality Grades do not apply to this type of tire.

1. **T:** Indicates a type of tire, designated by the Tire and Rim Association (T&RA), that is intended for temporary service on cars, SUVs, minivans and light trucks.

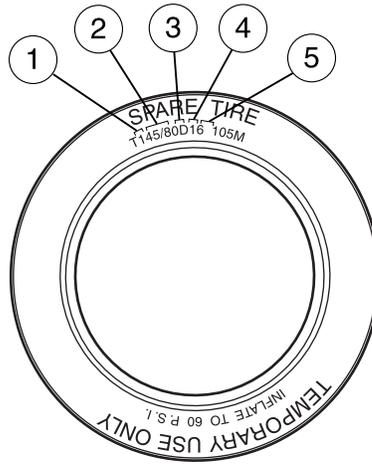
2. **145:** Indicates the nominal width of the tire in millimeters from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

3. **80:** Indicates the aspect ratio which gives the tire’s ratio of height to width. Numbers of 70 or lower indicate a short sidewall.

4. **D:** Indicates a “diagonal” type tire.

R: Indicates a “radial” type tire.

5. **16:** Indicates the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.



SNOW TIRES AND CHAINS



WARNING: Snow tires must be the same size, load index, speed rating as those originally provided by Ford. Use of any tire or wheel not recommended by Ford can affect the safety and performance of your vehicle, which could result in an increased risk of loss of vehicle control, vehicle rollover, personal injury and death. Additionally, the use of non-recommended tires and wheels could cause steering, suspension, axle or transfer case/power transfer unit failure.

Tires, Wheels and Loading

The tires on your vehicle have all weather treads to provide traction in rain and snow. However, in some climates, you may need to use snow tires and chains. If you need to use chains, it is recommended that steel wheels (of the same size and specifications) be used, as chains may chip aluminum wheels.

Follow these guidelines when using snow tires and chains:

- Use only SAE Class S chains.
- Install chains securely, verifying that the chains do not touch any wiring, brake lines or fuel lines.
- Drive cautiously. If you hear the chains rub or bang against your vehicle, stop and re-tighten the chains. If this does not work, remove the chains to prevent damage to your vehicle.
- If possible, avoid fully loading your vehicle.
- Remove the tire chains when they are no longer needed. Do not use tire chains on dry roads.
- The suspension insulation and bumpers will help prevent vehicle damage. Do not remove these components from your vehicle when using snow tires and chains.

VEHICLE LOADING – WITH AND WITHOUT A TRAILER

This section will guide you in the proper loading of your vehicle and/or trailer, to keep your loaded vehicle weight within its design rating capability, with or without a trailer. Properly loading your vehicle will provide maximum return of vehicle design performance. Before loading your vehicle, familiarize yourself with the following terms for determining your vehicle's weight ratings, with or without a trailer, from the vehicle's Safety Compliance Certification Label:

Base Curb Weight – is the weight of the vehicle including a full tank of fuel and all standard equipment. It does not include passengers, cargo, or optional equipment.

Vehicle Curb Weight – is the weight of your new vehicle when you picked it up from your authorized dealer plus any aftermarket equipment.

Tires, Wheels and Loading

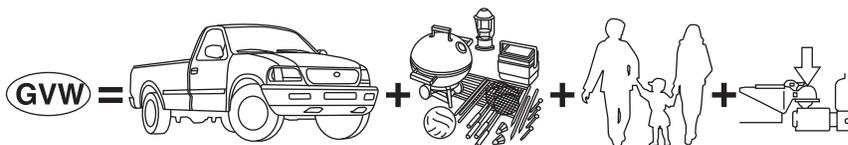


Cargo Weight – includes all weight added to the Base Curb Weight, including cargo and optional equipment. When towing, trailer tongue load weight is also part of cargo weight.

GAW (Gross Axle Weight) – is the total weight placed on each axle (front and rear) – including vehicle curb weight and all payload.

GAWR (Gross Axle Weight Rating) – is the maximum allowable weight that can be carried by a single axle (front or rear). **These numbers are shown on the Safety Compliance Certification Label located on the B-Pillar or the edge of the driver's door. The total load on each axle must never exceed its GAWR.**

Note: For trailer towing information refer to *Trailer towing* found in this chapter or the *RV and Trailer Towing Guide* provided by your authorized dealer.



GVW (Gross Vehicle Weight) – is the Vehicle Curb Weight + cargo + passengers.

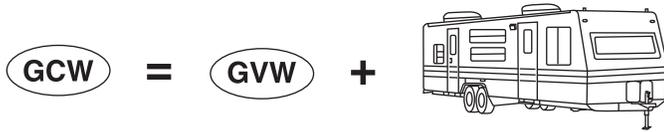
Tires, Wheels and Loading

GVWR (Gross Vehicle Weight Rating) – is the maximum allowable weight of the fully loaded vehicle (including all options, equipment, passengers and cargo). **The GVWR is shown on the Safety Compliance Certification Label located on the B-Pillar or the edge of the driver's door. The GVW must never exceed the GVWR.**

MFD. BY FORD MOTOR CO.					
DATE: XXXX	GVWR: XXXXXLB/ XXXXXKG				
FRONT GAWR: XXXXL	REAR GAWR: XXXXLB				
XXXXKG	WITH	XXXXKG	WITH		
XXXX/XXXXXX	TIRES	XXXX/XXXXXX	TIRES		
XXXX.XX	RIMS	XXXX.XX	RIMS		
AT XXX kPa/XX	PSI COLD	AT XXX kPa/XX	PSI COLD		
THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.					
VIN: XXXXXXXXXXXXXXXX	XXXXX		XXXXX		
TYPE: XXX					
					
EXT PNT: XX	RC: XX	DSO:			
WB ¹ BRK ¹ INT TR ¹ TP/PS ¹ TR ¹ AXLE ¹ TR ¹ SPR ¹ XXXXX					
XXX X XX X XX X XX XXX					
XXXXXXXXXXXXX XXX XXXX-XXXXXX-XX					



WARNING: Exceeding the Safety Compliance Certification Label vehicle weight rating limits could result in substandard vehicle handling or performance, engine, transmission and/or structural damage, serious damage to the vehicle, loss of control and personal injury.



GCW (Gross Combined Weight) – is the weight of the loaded vehicle (GVW) plus the weight of the fully loaded trailer.

GCWR (Gross Combined Weight Rating) – is the maximum allowable weight of the vehicle and the loaded trailer – including all cargo and passengers – that the vehicle can handle without risking damage. (Important: The towing vehicles' braking system is rated for operation at GVWR, not at GCWR. Separate functional brakes should be used for safe control of towed vehicles and for trailers where the GCW of the towing vehicle plus the trailer exceed the GVWR of the towing vehicle. **The GCW must never exceed the GCWR.**

Tires, Wheels and Loading

Maximum Loaded Trailer Weight – is the highest possible weight of a fully loaded trailer the vehicle can tow. It assumes a vehicle with only mandatory options, no cargo (internal or external), a tongue load of 10–15% (conventional trailer), and driver only (150 lb. [68 kg]). **Consult your authorized dealer (or the *RV and Trailer Towing Guide* provided by your authorized dealer) for more detailed information.**



WARNING: Do not exceed the GVWR or the GAWR specified on the Safety Compliance Certification Label.



WARNING: Do not use replacement tires with lower load carrying capacities than the original tires because they may lower the vehicle's GVWR and GAWR limitations. Replacement tires with a higher limit than the original tires do not increase the GVWR and GAWR limitations.



WARNING: Exceeding any vehicle weight rating limitation could result in serious damage to the vehicle and/or personal injury.

Steps for determining the correct load limit:

1. Locate the statement “The combined weight of occupants and cargo should never exceed XXX kg or XXX lbs.” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers that will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kg or XXX lbs.
4. The resulting figure equals the available amount of cargo and luggage load capacity. For example, if the “XXX” amount equals 1,400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage load capacity is 650 lbs. (1400–750 (5 x 150) = 650 lb.). In metric units (635–340 (5 x 68) = 295 kg.)
5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity calculated in Step 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

Tires, Wheels and Loading

The following gives you a few examples on how to calculate the available amount of cargo and luggage load capacity:

- Another example for your vehicle with 1400 lb. (635 kg) of cargo and luggage capacity. You decide to go golfing. Is there enough load capacity to carry you, 4 of your friends and all the golf bags? You and four friends average 220 lb. (99 kg) each and the golf bags weigh approximately 30 lb. (13.5 kg) each. The calculation would be: $1400 - (5 \times 220) - (5 \times 30) = 1400 - 1100 - 150 = 150$ lb. Yes, you have enough load capacity in your vehicle to transport four friends and your golf bags. In metric units, the calculation would be: $635 \text{ kg} - (5 \times 99 \text{ kg}) - (5 \times 13.5 \text{ kg}) = 635 - 495 - 67.5 = 72.5$ kg.
- A final example for your vehicle with 1400 lb. (635 kg) of cargo and luggage capacity. You and one of your friends decide to pick up cement from the local home improvement store to finish that patio you have been planning for the past 2 years. Measuring the inside of the vehicle with the rear seat folded down, you have room for 12-100 lb. (45 kg) bags of cement. Do you have enough load capacity to transport the cement to your home? If you and your friend each weigh 220 lb. (99 kg), the calculation would be: $1400 - (2 \times 220) - (12 \times 100) = 1400 - 440 - 1200 = -240$ lb. No, you do not have enough cargo capacity to carry that much weight. In metric units, the calculation would be: $635 \text{ kg} - (2 \times 99 \text{ kg}) - (12 \times 45 \text{ kg}) = 635 - 198 - 540 = -103$ kg. You will need to reduce the load weight by at least 240 lb. (104 kg). If you remove 3-100 lb. (45 kg) cement bags, then the load calculation would be:
 $1400 - (2 \times 220) - (9 \times 100) = 1400 - 440 - 900 = 60$ lb. Now you have the load capacity to transport the cement and your friend home. In metric units, the calculation would be: $635 \text{ kg} - (2 \times 99 \text{ kg}) - (9 \times 45 \text{ kg}) = 635 - 198 - 405 = 32$ kg.

The above calculations also assume that the loads are positioned in your vehicle in a manner that does not overload the Front or the Rear Gross Axle Weight Rating specified for your vehicle on the Safety Compliance Certification Label found on the edge of the driver's door.

Special loading instructions for owners of pickup trucks and utility-type vehicles



WARNING: For important information regarding safe operation of this type of vehicle, see the *Preparing to drive your vehicle* section in the *Driving* chapter of this *Owner's Guide*.

Tires, Wheels and Loading



WARNING: Loaded vehicles may handle differently than unloaded vehicles. Extra precautions, such as slower speeds and increased stopping distance, should be taken when driving a heavily loaded vehicle.

Your vehicle can haul more cargo and people than most passenger cars. Depending upon the type and placement of the load, hauling cargo and people may raise the center of gravity of the vehicle.

TRAILER TOWING

Your vehicle may tow a class I, II or III trailer provided the maximum trailer weight is less than or equal to the maximum trailer weight listed for your engine and rear axle ratio on the following chart:

GCWR (Gross Combined Weight Rating)/Trailer Weights				
Rear axle ratio	Maximum GVWR - lb (kg)	Maximum GCWR - lb (kg)	Maximum Trailer weight - lb (kg)	Maximum Frontal Area of Trailer - ft ² (m ²)
5.38	22000 (9979)	26000 (11793)	4000 (1814)	60 (5.6)
5.38	20500 (9299)	26000 (11793)	5500 (2500)	60 (5.6)
5.38	18000 (8165)	26000 (11793)	8000 (3629)	60 (5.6)
5.38	16000 (7257)	26000 (11793)	10000 (4536)	60 (5.6)
6.17	26000 (11793)	30000 (13608)	4000 (1814)	60 (5.6)
6.17	24000 (10886)	30000 (13608)	6000 (2721)	60 (5.6)

For high altitude operation reduce GCW by 2% per 1,000 ft. (300 meters) elevation. To determine the maximum trailer weight designed for your particular vehicle as equipped, follow the section *Vehicle Loading—with and without a trailer* in this chapter.

Tires, Wheels and Loading

Preparing to tow

Use the proper equipment for towing a trailer and make sure it is properly attached to your vehicle. Contact your authorized dealer or a reliable trailer dealer as soon as possible if you require assistance.

Hitches

You must distribute the load in your trailer so that 10–15% of the total weight of the trailer is on the tongue.

Weight distributing hitch

When hooking up a trailer using a load equalizing hitch, always use the following procedure:

1. Park the unloaded vehicle on a level surface. With the ignition on and all doors closed, allow the vehicle to stand for several minutes so that it can level.
2. Measure the height of a reference point on the front and rear bumpers at the center of the vehicle.
3. Attach the trailer to the vehicle and adjust the hitch equalizers so that the front bumper height is within ½ inch (13 mm) of the reference point. After proper adjustment, the rear bumper should be no higher than in Step 2.



WARNING: Do not adjust a weight distributing hitch to any position where the rear bumper of the vehicle is higher than it was before attaching the trailer. Doing so will defeat the function of the weight distributing hitch, which may cause unpredictable handling, and could result in serious personal injury.

Safety chains

Always connect the trailer's safety chains to the frame or hook retainers of the vehicle hitch. To connect the trailer's safety chains, cross the chains under the trailer tongue and allow slack for turning corners.

If you use a rental trailer, follow the instructions that the rental agency gives to you.

Do not attach safety chains to the bumper.

Tires, Wheels and Loading

Trailer brakes

Electric brakes and manual, automatic or surge-type brakes are safe if installed properly and adjusted to the manufacturer's specifications. The trailer brakes must meet local and Federal regulations.



WARNING: Do not connect a trailer's hydraulic brake system directly to your vehicle's brake system. Your vehicle may not have enough braking power and your chances of having a collision greatly increase.

The towing vehicle braking system is rated for operation at the GVWR, not the GCWR.

Separate functioning brake systems are required for safe control of towed vehicles and trailers weighing more than 1500 lb. (680 kg) when loaded.

Trailer lamps

Trailer lamps are required on most towed vehicles. Make sure all running lights, brake lights, turn signals and hazard lights are working. Contact your authorized dealer or trailer rental agency for proper instructions and equipment for hooking up trailer lamps.

Driving while you tow

When towing a trailer:

- Keep your speed no faster than 70 mph (113 km/h) during the first 500 miles (800 km) of towing a trailer, and don't make full throttle starts.
- Turn off the speed control. The speed control may shut off automatically when you are towing on long, steep grades.
- Consult your local motor vehicle speed regulations for towing a trailer.
- To eliminate excessive shifting, use a lower gear. This will also assist in transmission cooling.
- Anticipate stops and brake gradually.

Servicing after towing

If you tow a trailer for long distances, your vehicle will require more frequent service intervals. Refer to your *scheduled maintenance information* for more information.

Tires, Wheels and Loading

Trailer towing tips

- Practice turning, stopping and backing up before starting on a trip to get the feel of the vehicle trailer combination. When turning, make wider turns so the trailer wheels will clear curbs and other obstacles.
- Allow more distance for stopping with a trailer attached.
- If you are driving down a long or steep hill, shift to a lower gear. Do not apply the brakes continuously, as they may overheat and become less effective.
- The trailer tongue weight should be 10–15% of the loaded trailer weight.
- If you will be towing a trailer frequently in hot weather, hilly conditions, at GCWR, or any combination of these factors, consider refilling your rear axle with synthetic gear lube if not already so equipped. Refer to the *Maintenance and Specifications* chapter for the lubricant specification. Remember that regardless of the rear axle lube used, do not tow a trailer for the first 1,000 miles (1,600 km) of a new vehicle, and that the first 500 miles (800 km) of towing be done at no faster than 70 mph (113 km/h) with no full throttle starts.
- After you have traveled 50 miles (80 km), thoroughly check your hitch, electrical connections and trailer wheel lug nuts.
- To aid in engine/transmission cooling and A/C efficiency during hot weather while stopped in traffic, place the gearshift lever in P (Park).
- Vehicles with trailers should not be parked on a grade. If you must park on a grade, place wheel chocks under the trailer's wheels.

Driving

STARTING

Positions of the ignition

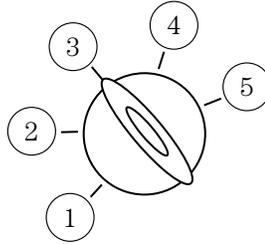
1. Accessory — allows the electrical accessories such as the radio to operate while the engine is not running.

2. Lock — locks the automatic transmission gearshift lever and allows key removal.

3. Off — shuts off the engine and all accessories.

4. On — all electrical circuits operational. Warning lights illuminated. Key position when driving.

5. Start — cranks the engine. Release the key as soon as the engine starts.



Preparing to start your vehicle

Engine starting is controlled by the powertrain control system.

This system meets all Canadian Interference-Causing Equipment standard requirements regulating the impulse electrical field strength of radio noise.

When starting a fuel-injected engine, avoid pressing the accelerator before or during starting. Only use the accelerator when you have difficulty starting the engine. For more information on starting the vehicle, refer to *Starting the engine* in this chapter.



WARNING: Extended idling at high engine speeds can produce very high temperatures in the engine and exhaust system, creating the risk of fire or other damage.



WARNING: Do not park, idle, or drive your vehicle in dry grass or other dry ground cover. The emission system heats up the engine compartment and exhaust system, which can start a fire.



WARNING: Do not start your vehicle in a closed garage or in other enclosed areas. Exhaust fumes can be toxic. Always open the garage door before you start the engine. See *Guarding against exhaust fumes* in this chapter for more instructions.

Driving



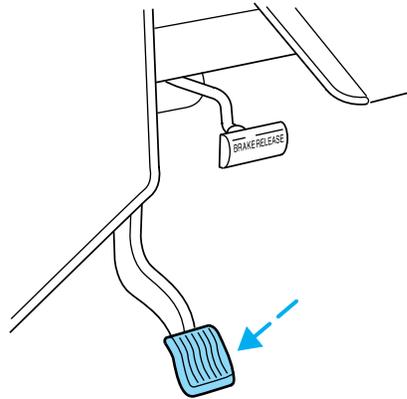
WARNING: If you smell exhaust fumes inside your vehicle, have your dealer inspect your vehicle immediately. Do not drive if you smell exhaust fumes.

Important safety precautions

A computer system controls the engine's idle revolutions per minute (RPM). When the engine starts, the idle RPM runs higher than normal in order to warm the engine. If the engine idle speed does not slow down automatically, have the vehicle checked. Do not allow the vehicle to idle for more than 10 minutes.

Before starting the vehicle:

1. Make sure all vehicle occupants have buckled their safety belts.
2. Make sure the headlamps and vehicle accessories are off.
3. Make sure the parking brake is set.

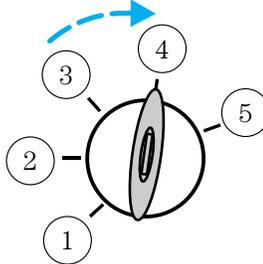


4. Make sure the gearshift is in P (Park).



Driving

5. Turn the key to 4 (on) without turning the key to 5 (start).



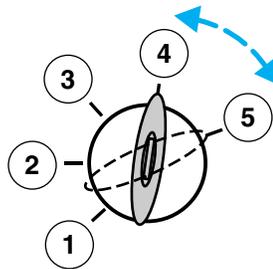
Some warning lights will briefly illuminate. See *Warning lights and chimes* in the *Instrument Cluster* chapter for more information regarding the warning lights.

Vehicle speed is limited to 75 mph (120 km/h).

Starting the engine

1. Turn the key to 4 (on) without turning the key to 5 (start).

2. Turn the key to 5 (start), then release the key as soon as the engine begins cranking. Your vehicle has a computer assisted cranking system that assists in starting the engine. After releasing the key from the 5 (start) position, the engine may continue cranking for up to 10 seconds or until the vehicle starts.



Note: Cranking may be stopped at any time by turning the key to the off position.

3. After idling for a few seconds, apply the brake, shift into gear and drive.

Note: If the engine does not start on the first try, turn the key to the 3 (off) position, wait 10 seconds and try Step 2 again. If the engine still fails to start, press the accelerator to the floor and try Step 2 again, keeping the accelerator on the floor until the engine begins to accelerate above cranking speeds; this will allow the engine to crank with the fuel shut off in case the engine is flooded with fuel.

Guarding against exhaust fumes

Carbon monoxide is present in exhaust fumes. Take precautions to avoid its dangerous effects.

Driving



WARNING: If you smell exhaust fumes inside your vehicle, have your dealer inspect your vehicle immediately. Do not drive if you smell exhaust fumes.

Important ventilating information

If the engine is idling while the vehicle is stopped in an open area for long periods of time, open the windows at least one inch (2.5 cm).

Adjust the heating or air conditioning (if equipped) to bring in fresh air.

Improve vehicle ventilation by keeping all air inlet vents clear of snow, leaves and other debris.

BRAKES

Your service brakes are self-adjusting. Refer to the *scheduled maintenance information* for scheduled maintenance.

Occasional brake noise is normal and often does not indicate a performance concern with the vehicle's brake system. In normal operation, automotive brake systems may emit occasional or intermittent squeal or groan noises when the brakes are applied. Such noises are usually heard during the first few brake applications in the morning; however, they may be heard at any time while braking and can be aggravated by environmental conditions such as cold, heat, moisture, road dust, salt or mud. If a "metal-to-metal," "continuous grinding" or "continuous squeal" sound is present while braking, the brake linings may be worn-out and should be inspected by an authorized dealer.

Refer to *Brake system warning light* in the *Instrument Cluster* chapter for information on the brake system warning light.



WARNING: If you are driving down a long or steep hill, shift to a lower gear. Do not apply your brakes continuously, as they may overheat and become less effective.

Hydraulic brake booster system (Hydroboost or Hydromax)

The Hydroboost and Hydromax systems receive fluid pressure from the power steering pump to provide power assist during braking.

The Hydromax booster receives backup pressure from the reserve system electric pump whenever the fluid in the power steering system is

Driving

not flowing. When the engine is OFF, the pump will turn on if the brake pedal is applied, or if the ignition is turned to the ON position.

The sound of the pump operating may be heard by the driver, but this is a normal characteristic of the system.

The reserve system provides reduced braking power, so the vehicle should be operated under these conditions with caution, and only to seek service repair and remove the vehicle from the roadway.

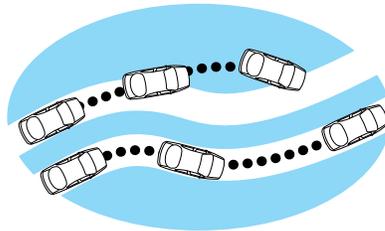
For Hydromax-equipped vehicles operating under normal conditions, the noise of the fluid flowing through the booster may be heard whenever the brake is applied. This condition is normal. Vehicle service is not required.

If braking performance or pedal response becomes very poor, even when the pedal is strongly depressed, it may indicate the presence of air in the hydraulic system or leakage of fluid. Stop the vehicle safely as soon as possible and seek service immediately.

Anti-lock brake system (ABS)

On vehicles equipped with an anti-lock braking system (ABS), a noise from the hydraulic pump motor and pulsation in the pedal may be observed during ABS braking events. Pedal pulsation coupled with noise while braking under panic conditions or on loose gravel, bumps, wet or snowy roads is normal and indicates proper functioning of the vehicle's anti-lock brake system. The ABS performs a self-check after you start the engine and begin to drive away. A brief mechanical noise may be heard during this test. This is normal. If a malfunction is found, the ABS warning light will come on. If the vehicle has continuous vibration or shudder in the steering wheel while braking, the vehicle should be inspected by an authorized dealer.

The ABS operates by detecting the onset of wheel lockup during brake applications and compensates for this tendency. The wheels are prevented from locking even when the brakes are firmly applied. The accompanying illustration depicts the advantage of an ABS equipped vehicle (on bottom) to a non-ABS equipped vehicle (on top) during hard braking with loss of front braking traction.

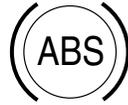


Using ABS

- In an emergency or when maximum efficiency from the four-wheel ABS is required, apply continuous force on the brake. The four wheel ABS will be activated immediately, thus allowing you to retain steering control of your vehicle and, providing there is sufficient space, will enable you to avoid obstacles and bring the vehicle to a controlled stop.
- The anti-lock system does not reduce stopping distance. Always leave enough room between your vehicle and the vehicle in front of you to stop.
- We recommend that you familiarize yourself with this braking technique. However, avoid taking any unnecessary risks.

ABS warning lamp

The ABS warning lamp in the instrument cluster momentarily illuminates when the ignition is turned on. If the light remains on after the vehicle is started, continues to flash or fails to illuminate, have the system serviced immediately.



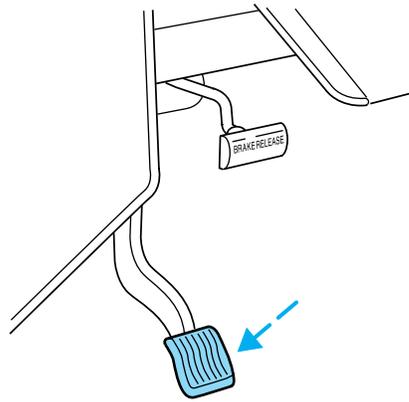
With the ABS light on, the anti-lock brake system is disabled and normal braking is still effective unless the brake warning light also remains illuminated with parking brake released. (If your brake warning lamp illuminates, have your vehicle serviced immediately.)



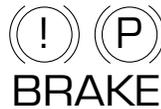
Driving

Parking brake

Apply the parking brake whenever the vehicle is parked. Push pedal downward to set the parking brake.



The BRAKE warning lamp in the instrument cluster illuminates and remains illuminated (when the ignition is turned on) until the parking brake is released.

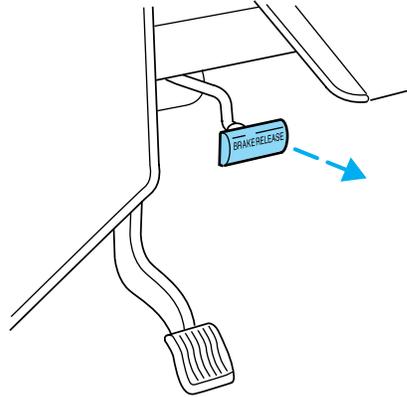


WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the LOCK position and remove the key whenever you leave your vehicle.

The parking brake is not recommended to stop a moving vehicle. However, if the normal brakes fail, the parking brake can be used to stop your vehicle in an emergency. Since the parking brake applies only the transmission mounted parking brake assembly, the vehicle's stopping distance will increase greatly and the handling of your vehicle will be adversely affected.

Driving

Push the service brake pedal with your foot and pull the parking brake release handle to release the parking brake.



AUTOMATIC TRANSMISSION OPERATION

Brake-shift interlock

The vehicle is equipped with a brake-shift interlock feature that prevents the gearshift lever from being moved from P (Park) unless the brake pedal is depressed.

If you cannot move the gearshift lever out of P (Park) position with the ignition in the 4 (on) position and the brake pedal depressed, a malfunction may have occurred. It is possible that a fuse has blown or the vehicle's brakelamps are not operating properly. Refer to *Fuses and relays* in the *Roadside Emergencies* chapter. If the fuses and brakelamps are working properly, and the vehicle still will not shift out of (P) Park, see your authorized dealer for service.

In an emergency, to disable the malfunctioning brake-shift interlock feature in order to shift the vehicle from P (Park) follow these steps:



WARNING: To prevent vehicle movement when following this procedure, park on a level surface, ensure parking brake is set, and block the rear wheels.

1. Apply the parking brake. Turn key to the 2 (lock), and then remove the key;
2. Disconnect the negative (black) battery cable from the battery;
3. Insert the key and turn to 3 (off). Shift to N (Neutral);

Driving

4. Reconnect the negative (black) battery cable to the battery;
5. Start the vehicle.

See your authorized dealer for service immediately.



WARNING: If your brake lamps are not working properly or if you have disconnected the vehicle battery cables, the vehicle brake lamps and hazard flashers may not properly warn traffic of a vehicle breakdown or approaching danger, which can increase the risk of serious injury or death. To minimize the risk of serious injury or death, be aware of your surroundings, use other hazard signaling devices if available, and move the vehicle to a safe location away from traffic as soon as possible.



WARNING: Do not drive your vehicle until you verify that the brakelamps are working.



WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the lock position and remove the key whenever you leave your vehicle.



WARNING: If the parking brake is fully released, but the brake warning lamp remains illuminated, the brakes may not be working properly. See your authorized dealer.

Understanding the shift positions of the 5-speed automatic transmission



This vehicle is equipped with an adaptive Transmission Shift Strategy. Adaptive Shift Strategy offers the optimal transmission operation and shift quality. When the vehicle's battery has been disconnected for any type of service or repair, the transmission will need to relearn the normal shift strategy parameters, much like having to reset your radio stations when your vehicle battery has been disconnected. The Adaptive Transmission Strategy allows the transmission to relearn these operating parameters. This learning process could take several transmission upshifts and downshifts; during this learning process, slightly firmer shifts may occur. After this learning process, normal shift feel and shift scheduling will resume.

P (Park)

This position locks the transmission and prevents the rear wheels from turning.

To put your vehicle in gear:

- Start the engine
- Depress the brake pedal
- Move the gearshift lever into the desired gear

To put your vehicle in P (Park):

- Come to a complete stop
- Move the gearshift lever and securely latch it in P (Park)



WARNING: Always set the parking brake fully and make sure the gearshift is latched in P (Park). Turn the ignition to the LOCK position and remove the key whenever you leave your vehicle.

R (Reverse)

With the gearshift lever in R (Reverse), the vehicle will move backward. Always come to a complete stop before shifting into and out of R (Reverse).

Driving

N (Neutral)

With the gearshift lever in N (Neutral), the vehicle can be started and is free to roll. Hold the brake pedal down while in this position.

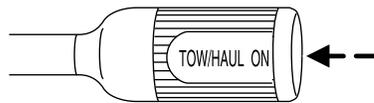
D (Overdrive) with Tow/Haul OFF

D (Overdrive) with Tow/Haul Off is the normal driving position for the best fuel economy. The overdrive function allows automatic upshifts and downshifts through gears one through five.

D (Overdrive) with Tow/Haul ON

The Tow/Haul feature improves transmission operation when towing a trailer or a heavy load. All transmission gear ranges are available when using Tow/Haul.

To activate Tow/Haul, press the button on the end of the gearshift lever.



The TOW HAUL indicator light will illuminate in the instrument cluster.

**TOW
HAUL**

Tow/Haul delays upshifts to reduce frequency of transmission shifting. Tow/Haul also provides engine braking in all forward gears when the transmission is in the D (Overdrive) position; this engine braking will slow the vehicle and assist the driver in controlling the vehicle when descending a grade. Depending on driving conditions and load conditions, the transmission may downshift, slow the vehicle and control the vehicle speed when descending a hill, without the accelerator pedal being pressed. The amount of downshift braking provided will vary based upon the amount the brake pedal is depressed.

Grade braking downshifts occur automatically when all three of the following occur:

- Positive vehicle acceleration (natural acceleration from driving on a decline) is sensed.
- Nearly all pressure is released from the accelerator pedal.
- A minimum amount of time has expired since the last grade braking downshift.

Driving

Grade braking downshift mode is immediately exited if the Tow/Haul mode is deactivated or if the accelerator pedal is depressed beyond a minimum threshold.

To deactivate the Tow/Haul feature and return to normal driving mode, press the button on the end of the gearshift lever. The TOW HAUL light will no longer be illuminated.

When you shut-off and restart the engine, the transmission will automatically return to normal D (Overdrive) mode (Tow/Haul Off).



WARNING: Do not use the Tow/Haul feature when driving in icy or slippery conditions as the increased engine braking can cause the rear wheels to slide and the vehicle to swing around with the possible loss of vehicle control.

3 (Third)

Transmission starts and operates in third gear only.

Used for improved traction on slippery roads. Selecting 3 (Third) provides engine braking.

2 (Second)

Use 2 (Second) to start-up on slippery roads or to provide additional engine braking on downgrades.

1 (First)

- Provides maximum engine braking.
- Allows upshifts by moving gearshift lever.
- The transmission will not downshift into 1 (First) at high speeds; it will downshift to a lower gear and then shift into 1 (First) when the vehicle reaches slower speeds.

Forced downshifts

- Allowed in D (Overdrive) with the Tow/Haul feature on or off.
- Depress the accelerator to the floor.
- Allows transmission to select an appropriate gear.

Driving

If your vehicle gets stuck in mud or snow

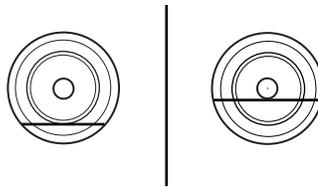
If your vehicle gets stuck in mud or snow, it may be rocked out by shifting between forward and reverse gears, stopping between shifts in a steady pattern. Press lightly on the accelerator in each gear.

Do not rock the vehicle if the engine is not at normal operating temperature or damage to the transmission may occur.

Do not rock the vehicle for more than a minute or damage to the transmission and tires may occur, or the engine may overheat.

DRIVING THROUGH WATER

If driving through deep or standing water is unavoidable, proceed very slowly especially when the depth is not known. Never drive through water that is higher than the bottom of the wheel rims (for cars) or the bottom of the hubs (for trucks).



When driving through water, traction or brake capability may be limited. Also, water may enter your engine's air intake and severely damage your engine or your vehicle may stall. **Driving through deep water where the transmission vent is submerged may allow water into the transmission and cause internal transmission damage.**

Once through the water, always dry the brakes by moving your vehicle slowly while applying light pressure on the brake pedal. Wet brakes do not stop the vehicle as quickly as dry brakes.

Roadside Emergencies

ROADSIDE ASSISTANCE

Getting roadside assistance

To fully assist you should you have a vehicle concern, Ford Motor Company offers a complimentary roadside assistance program. This program is separate from the New Vehicle Limited Warranty. The service is available:

- 24-hours, seven days a week
- for the coverage period listed on the Roadside Assistance Card included in your Owner Guide portfolio.

Roadside assistance will cover:

- a flat tire change with a good spare (except vehicles that have been supplied with a tire inflation kit)
- battery jump start
- lock-out assistance (key replacement cost is the customer's responsibility)
- fuel delivery – Independent Service Contractors, if not prohibited by state, local or municipal law shall deliver 5 gallons (18.9L) of fuel to a disabled vehicle. Fuel delivery service is limited to two no-charge occurrences within a 12-month period.
- towing – Ford/Mercury/Lincoln eligible vehicle towed to an authorized dealer within 35 miles (56.3 km) of the disablement location or to the nearest authorized dealer. If a member requests to be towed to an authorized dealer more than 35 miles (56.3 km) from the disablement location, the member shall be responsible for any mileage costs in excess of 35 miles (56.3 km).

Trailers shall be covered up to \$200 if the disabled eligible vehicle requires service at the nearest authorized dealer. If the trailer is disabled, but the towing vehicle is operational, the trailer does not qualify for any roadside services.

Canadian customers refer to your Customer Information Guide for information on:

- coverage period
- exact fuel amounts
- towing of your disabled vehicle

Roadside Emergencies

Using roadside assistance

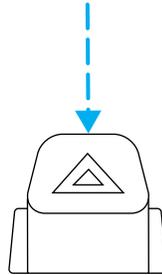
Customers in the U.S. and Canada who require roadside assistance, may contact 1-800-444-3311.

If you need to arrange roadside assistance for yourself, Ford Motor Company will reimburse a reasonable amount for towing to the nearest dealership with 35 miles. To obtain reimbursement information contact 1-800-444-3311. Customers will be asked to submit their original receipts.

HAZARD FLASHERS

Use only in an emergency to warn traffic of vehicle breakdown, approaching danger, etc. The hazard flashers can be operated when the ignition is off.

- The hazard flasher control is located on top of the steering column.
- Depress hazard flasher control to activate the hazard flashers.
- Depress control again to turn the flashers off.



Roadside Emergencies

FUSES AND RELAYS

Standard fuse amperage rating and color

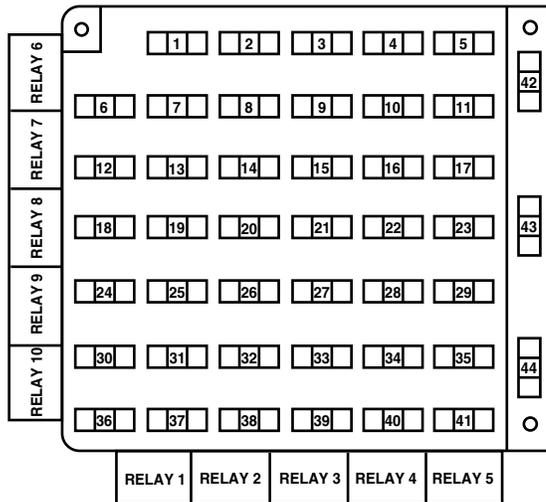
COLOR					
Fuse rating	Mini fuses	Standard fuses	Maxi fuses	Cartridge maxi fuses	Fuse link cartridge
2A	Grey	Grey	—	—	—
3A	Violet	Violet	—	—	—
4A	Pink	Pink	—	—	—
5A	Tan	Tan	—	—	—
7.5A	Brown	Brown	—	—	—
10A	Red	Red	—	—	—
15A	Blue	Blue	—	—	—
20A	Yellow	Yellow	Yellow	Blue	Blue
25A	Natural	Natural	—	—	—
30A	Green	Green	Green	Pink	Pink
40A	—	—	Orange	Green	Green
50A	—	—	Red	Red	Red
60A	—	—	Blue	Yellow	Yellow
70A	—	—	Tan	—	Brown
80A	—	—	Natural	Black	Black

Passenger compartment fuse panel

The fuse panel is located below and to the left of the steering wheel by the brake pedal. Remove the panel cover to access the fuses.

To remove a fuse use the fuse puller tool provided on the fuse panel cover.

Roadside Emergencies



The fuses are coded as follows.

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
1	20A	Turn/stop lamps, Turn indicators, Body builder rear turn/stop feeds
2	—	Not used
3	—	Not used
4	10A	Instrument panel cluster
5	10A	Body builder accessory feed (accessory and run)
6	—	Not used
7	15A	Blower motor relay coil
8	—	Not used

Roadside Emergencies

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
9	20A	Stoplamps: Vehicle turn/stop lamps, Body builder rear turn/stop feeds, Body builder stop lamp feed
10	10A	Instrument cluster memory, Power brake assist lamp*
11	30A	Wiper/Washer module, Wiper feed
12	—	Not used
13	10A	Anti-lock Brake System (ABS) module
14	10A	Warning chime module, Power brake assist module*, Instrument cluster power, Instrument cluster warning lamps
15	15A	Left turn signal feed
16	20A	Body builder battery (+12V) feed
17	5A	Body builder radio feed
18	—	Not used
19	5A	Daytime Running Lamps (DRL) relays
20	—	Not used
21	15A	Right turn signal feed
22	20A	Trailer tow turn signals
23	10A	Cluster run/accessory
24	—	Not used
25	10A	Body builder right-hand low beam headlamp feed
26	10A	Brake shift interlock actuator
27	—	Not used
28	—	Not used
29	—	Not used
30	—	Not used

Roadside Emergencies

Fuse/Relay Location	Fuse Amp Rating	Protected circuits
31	10A	Body builder left-hand low beam headlamp feed
32	—	Not used
33	10A	Reverse lamps
34	10A	Trailer tow reverse lamps, Body builder reverse gear
35	20A	Body builder high beam feed, High beam indicator
36	—	Not used
37	—	Not used
38	10A	Body builder run feed
39	—	Not used
40	—	Not used
41	10A	Instrument illumination
42	—	Not used
43	—	Not used
44	—	Not used
Relay 1	—	Trailer tow right turn signal
Relay 2	—	Trailer tow left turn signal
Relay 3	—	Right turn signal
Relay 4	—	Left turn signal
Relay 5	—	Not used
Relay 6	—	Not used
Relay 7	—	Not used
Relay 8	—	Not used
Relay 9	—	DRL on/off
Relay 10	—	DRL, Parking brake

*Vehicles with Hydromax brake assist only

Power distribution box

The power distribution box is located in the engine compartment. The power distribution box contains high-current fuses that protect your vehicle's main electrical systems from overloads.

Roadside Emergencies

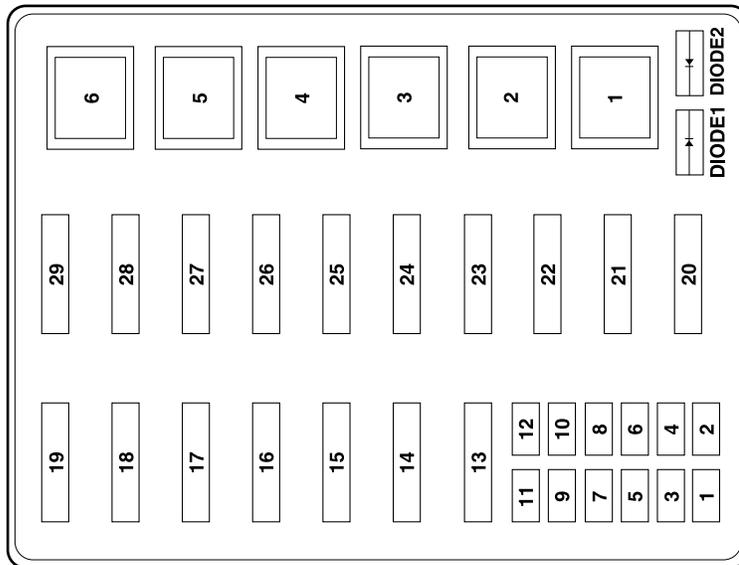


WARNING: Always disconnect the battery before servicing high current fuses.



WARNING: To reduce risk of electrical shock, always replace the cover to the Power Distribution Box before reconnecting the battery or refilling fluid reservoirs.

If the battery has been disconnected and reconnected, refer to the *Battery* section of the *Maintenance and Specifications* chapter.



The high-current fuses are coded as follows.

Fuse/Relay Location	Fuse Amp Rating	Protected Circuits
1	5A*	Power brake assist module***
2	10A*	A/C compressor clutch

Roadside Emergencies

Fuse/Relay Location	Fuse Amp Rating	Protected Circuits
3	20A*	A/C clutch relay coil, Mass Air Flow Sensor (MAFS) with Intake Air Temperature (IAT), Vapor Management Valve, Engine Heated Exhaust Gas Oxygen (HEGO) sensor #11, HEGO #21, Catalyst Monitor Sensor (CMS)
4	5A*	Powertrain Control Module (PCM) memory
5	20A*	PCM power
6	20A*	Park lamp feeds, Instrument Panel (IP) fuse #41, Warning chime module, Trailer tow running lamp relay coil, IP dimmer module
7	20A*	Ignition coils, Radio capacitors
8	10A*	Stoplamp switch (logic): Power brake assist module***, Speed control module, PCM, Anti-lock Brake System (ABS) module, Brake shift interlock actuator
9	10A*	Starter main relay coil, Starter ground relay coil
10	20A*	Daytime Running Lamps (DRL)
11	20A*	Fuel pump relay coil, PCM power
12	25A*	Trailer tow back-up lamps feed, IP - backup lamp feed
13	30A**	Trailer tow electric brake controller feed
14	60A**	IP battery feed (fuse #9, 15, 21)
15	20A	Trailer tow park lamps
16	60A**	ABS module
17	20A**	Horn feed

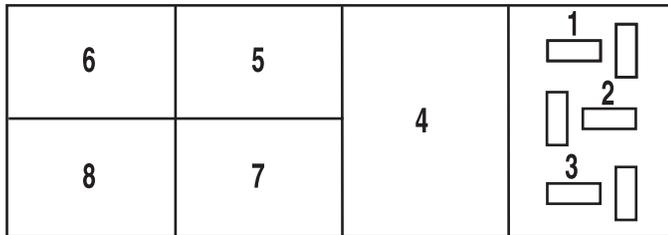
Roadside Emergencies

Fuse/Relay Location	Fuse Amp Rating	Protected Circuits
18	20A**	Transmission control indicator light, Tow/haul switch, Backup lamp feed
19	—	Not used
20	30A**	PCM relay coil, PCM relay (PDB fuses # 3, 5, 7, 18)
21	20A**	Fuel pump motor, Fuel injectors
22	20A**	Diagnostic tool connector, Cigar lighter feed
23	40A**	Blower motor feed
24	50A**	IP battery feed (fuses #4, 10, 16, 22)
25	40A**	Ignition switch feed (IP fuses #1, 5, 7, 11, 13, 14, 17, 19, 23; PDB fuses #9, 11)
26	40A**	Ignition switch feed (IP fuses #5, 11, 17, 23, 26, 38)
27	30A**	Multifunction switch (headlamps)
28	30A**	Starter solenoid
29	60A**	Power brake assist motor***
Relay 1	—	A/C clutch
Relay 2	—	Fuel pump relay
Relay 3	—	Horn relay
Relay 4	—	Starter relay
Relay 5	—	Blower motor relay
Relay 6	—	PCM relay
Diode 1	—	Fuel pump diode
Diode 2	—	A/C clutch diode
* Mini Fuses ** Maxi Fuses ***Vehicles with Hydromax brake assist only		

Roadside Emergencies

Diode/Relay module

The module box is located by the power distribution box in front of the radiator in the engine compartment.



The components are coded as follows:

Relay location	Description
1	One touch integrated start (ATO diode)
2	Not used
3	Not used
4	DRL power (relay)
5	Not used
6	Starter ground (relay)
7	Reverse lamps (relay)
8	Trailer tow parking lamps (relay)

CHANGING A FLAT TIRE

If you get a flat tire while driving:

- do not brake heavily.
- gradually decrease the vehicle's speed.
- hold the steering wheel firmly.
- slowly move to a safe place on the side of the road.

Dissimilar spare tire/wheel information



WARNING: Failure to follow these guidelines could result in an increased risk of loss of vehicle control, injury or death.

If you have a dissimilar spare tire/wheel, then it is intended for temporary use only. This means that if you need to use it, you should

Roadside Emergencies

replace it as soon as possible with a road tire/wheel that is the same size and type as the road tires and wheels that were originally provided by Ford. If the dissimilar spare tire or wheel is damaged, it should be replaced rather than repaired.

A dissimilar spare tire/wheel is defined as a spare tire and/or wheel that is different in brand, size or appearance from the road tires and wheels and can be one of three types:

1. **T-type mini-spares:** This spare tire begins with the letter “T” for tire size and may have “Temporary Use Only” molded in the sidewall
2. **Full-size dissimilar spare with label on wheel:** This spare tire has a label on the wheel that states: “THIS TIRE AND WHEEL FOR TEMPORARY USE ONLY”

When driving with one of the dissimilar spare tires listed above, **do not:**

- Exceed 50 mph (80 km/h)
- Load the vehicle beyond maximum vehicle load rating listed on the Safety Compliance Label
- Tow a trailer
- Use snow chains on the end of the vehicle with the dissimilar spare tire
- Use more than one dissimilar spare tire at a time
- Use commercial car washing equipment
- Try to repair the dissimilar spare tire

Use of one of the dissimilar spare tires listed above at any one wheel location can lead to impairment of the following:

- Handling, stability and braking performance
- Comfort and noise
- Ground clearance and parking at curbs
- Winter weather driving capability
- Wet weather driving capability

Roadside Emergencies

3. Full-size dissimilar spare without label on wheel

When driving with the full-size dissimilar spare tire/wheel, **do not:**

- Exceed 70 mph (113 km/h)
- Use more than one dissimilar spare tire/wheel at a time
- Use commercial car washing equipment
- Use snow chains on the end of the vehicle with the dissimilar spare tire/wheel

The usage of a full-size dissimilar spare tire/wheel can lead to impairment of the following:

- Handling, stability and braking performance
- Comfort and noise
- Ground clearance and parking at curbs
- Winter weather driving capability
- Wet weather driving capability
- All-Wheel driving capability (if applicable)
- Load leveling adjustment (if applicable)

When driving with the full-size dissimilar spare tire/wheel additional caution should be given to:

- Towing a trailer
- Driving vehicles equipped with a camper body
- Driving vehicles with a load on the cargo rack

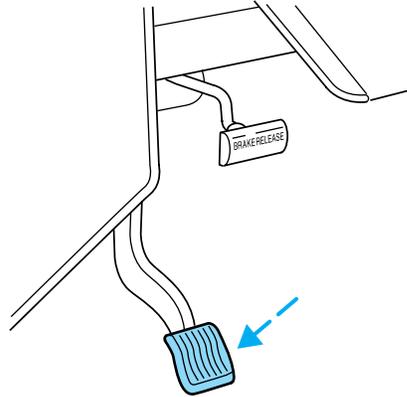
Drive cautiously when using a full-size dissimilar spare tire/wheel and seek service as soon as possible.

Stopping and securing the vehicle

1. Park on a level surface.
2. Activate the warning flashers.
3. Place the gearshift in P (Park).

Roadside Emergencies

4. Apply the parking brake and turn engine OFF.



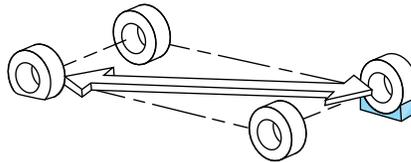
Tire change procedure

! WARNING: To help prevent the vehicle from moving when you change a tire, be sure the parking brake is set, then block (in both directions) the wheel that is diagonally opposite (other side and end of the vehicle) to the tire being changed.

! WARNING: Do not attempt to change a tire on the side of the vehicle close to moving traffic. Pull far enough off the road to avoid the danger of being hit when operating the jack or changing the wheel.

1. Block the wheel that is diagonally opposite the tire you are changing.

The parking brake is on the transmission. Therefore, the vehicle will not be prevented from moving when a rear wheel is lifted, even if the parking brake is applied. Be sure to block both directions of the wheel that is diagonally opposite to the wheel that is being lifted.



! WARNING: If the vehicle slips off the jack, you or someone else could be seriously injured.

2. Remove the spare tire and jack from the storage location.

Roadside Emergencies

3. Loosen the wheel nut by pulling up on the handle of the lug nut wrench about one-half turn (counterclockwise). Do not remove the wheel lug nuts until you raise the tire off the ground.

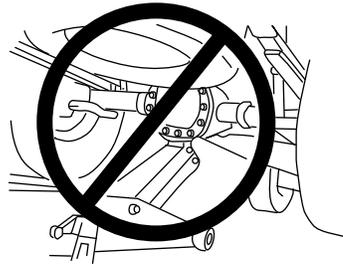
Replacing the tire



WARNING: Failure to follow the instructions below may result in serious personal injury. Do not put any part of your body under the vehicle while the vehicle is on a jack. Do not start the engine while the vehicle is on a jack. Only use the jack for emergency wheel and tire changing. Only select a jack with a rated capacity sufficient to lift and hold up the vehicle.

4. Position the jack to raise the front or rear wheel. Raise the vehicle with the jack applied to the axle(s).

- **Never use the rear differential as a jacking point.**

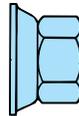


5. Raise the vehicle until the wheel is completely off the ground.

6. Remove the lug nuts with the lug nut wrench.

7. Replace the flat tire with the spare tire.

8. Use the lug nut wrench to screw the lug nut snugly against the wheel.



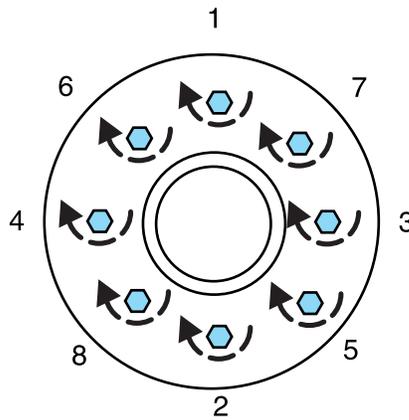
9. Lower the vehicle.

10. Remove the jack and fully tighten the lug nuts in the order shown. Refer to *Wheel lug nut torque specifications* later in this chapter for the proper lug nut torque specification.

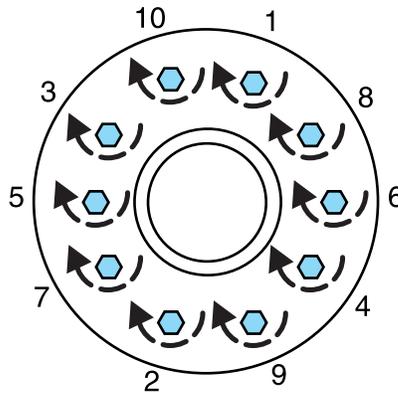
Roadside Emergencies

 **WARNING:** Never use wheels or lug nuts different than the original equipment as this could damage the wheel or mounting system. This damage could allow the wheels to come off while the vehicle is being driven.

8-lug nut torque sequence



10-lug nut torque sequence



11. Replace any wheel trim.
12. Stow the jack, handle and lug wrench.
13. Unblock the wheels.

Roadside Emergencies

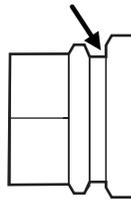
WHEEL LUG NUT TORQUE SPECIFICATIONS

On vehicles equipped with dual rear wheels, retighten the wheel lug nuts to the specified torque at 100 miles (160 km), and again at 500 miles (800 km) of new vehicle operation and after any wheel disturbance (tire rotation, changing a flat tire, wheel removal, etc.).

Bolt size	Wheel lug nut torque*	
	lb.ft.	N•m
19.5 in. wheels: M14 x 1.5	150	200
22.5 in. wheels: M22 x 1.5	450	610

* Torque specifications are for nut and bolt threads free of dirt and rust. Use only Ford recommended replacement fasteners.

On all two-piece flat wheel nuts, apply one drop of motor oil between the flat washer and the nut. Do not apply motor oil to the wheel nut threads or the wheel stud threads.



WARNING: When a wheel is installed, always remove any corrosion, dirt or foreign materials present on the mounting surfaces of the wheel or the surface of the wheel hub, brake drum or brake disc that contacts the wheel. Ensure that any fasteners that attach the rotor to the hub are secured so they do not interfere with the mounting surfaces of the wheel. Installing wheels without correct metal-to-metal contact at the wheel mounting surfaces can cause the wheel nuts to loosen and the wheel to come off while the vehicle is in motion, resulting in loss of control.

JUMP STARTING

WARNING: The gases around the battery can explode if exposed to flames, sparks, or lit cigarettes. An explosion could result in injury or vehicle damage.

WARNING: Batteries contain sulfuric acid which can burn skin, eyes and clothing, if contacted.

Roadside Emergencies

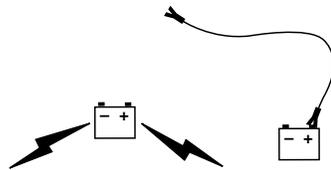
Do not attempt to push-start your automatic transmission vehicle. Automatic transmissions do not have push-start capability. Attempting to push-start a vehicle with an automatic transmission may cause transmission damage.

Preparing your vehicle

When the battery is disconnected or a new battery is installed, the automatic transmission must relearn its shift strategy. As a result, the transmission may have firm and/or soft shifts. This operation is considered normal and will not affect function or durability of the transmission. Over time, the adaptive learning process will fully update transmission operation.

1. **Use only a 12-volt supply to start your vehicle.**
2. Do not disconnect the battery of the disabled vehicle as this could damage the vehicle's electrical system.
3. Park the booster vehicle close to the hood of the disabled vehicle making sure the two vehicles **do not** touch. Set the parking brake on both vehicles and stay clear of the engine cooling fan and other moving parts.
4. Check all battery terminals and remove any excessive corrosion before you attach the battery cables. Ensure that vent caps are tight and level.
5. Turn the heater fan on in both vehicles to protect from any electrical surges. Turn all other accessories off.

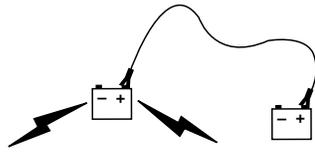
Connecting the jumper cables



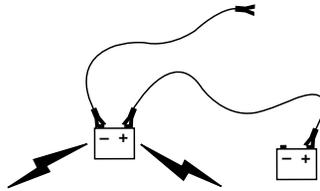
1. Connect the positive (+) jumper cable to the positive (+) terminal of the discharged battery.

Note: In the illustrations, *lightning bolts* are used to designate the assisting (boosting) battery.

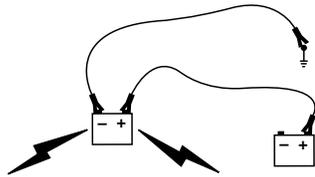
Roadside Emergencies



2. Connect the other end of the positive (+) cable to the positive (+) terminal of the assisting battery.



3. Connect the negative (-) cable to the negative (-) terminal of the assisting battery.



4. Make the final connection of the negative (-) cable to an exposed metal part of the stalled vehicle's engine, away from the battery and the carburetor/fuel injection system. **Do not** use fuel lines, engine rocker covers or the intake manifold as *grounding* points.



WARNING: Do not connect the end of the second cable to the negative (-) terminal of the battery to be jumped. A spark may cause an explosion of the gases that surround the battery.

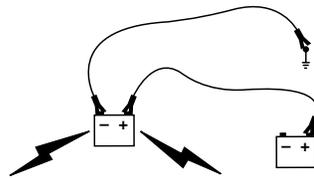
5. Ensure that the cables are clear of fan blades, belts, moving parts of both engines, or any fuel delivery system parts.

Roadside Emergencies

Jump starting

1. Start the engine of the booster vehicle and run the engine at moderately increased speed.
2. Start the engine of the disabled vehicle.
3. Once the disabled vehicle has been started, run both engines for an additional three minutes before disconnecting the jumper cables.

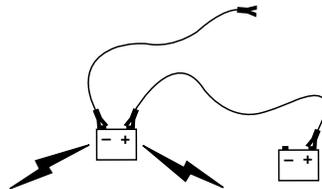
Removing the jumper cables



Remove the jumper cables in the reverse order that they were connected.

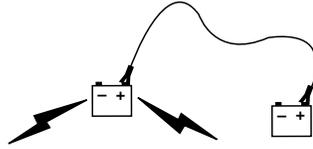
1. Remove the jumper cable from the *ground* metal surface.

Note: In the illustrations, *lightning bolts* are used to designate the assisting (boosting) battery.

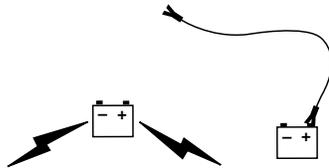


2. Remove the jumper cable on the negative (-) connection of the booster vehicle's battery.

Roadside Emergencies



3. Remove the jumper cable from the positive (+) terminal of the booster vehicle's battery.



4. Remove the jumper cable from the positive (+) terminal of the disabled vehicle's battery.

After the disabled vehicle has been started and the jumper cables removed, allow it to idle for several minutes so the engine computer can *relearn* its idle conditions.

WRECKER TOWING

If you need to have your vehicle towed, contact a professional towing service or, if you are a member of a roadside assistance program, your roadside assistance service provider.

It is recommended that your vehicle be towed with a wheel lift (with the rear wheels on the ground and the front wheels off the ground) or flatbed equipment.

To avoid transmission damage when towing your vehicle from the front with the rear wheels on the ground, do not exceed a maximum distance of 50 miles (80 km) and a maximum speed of 35 mph (56 km/h). If the maximum distance or speed will be exceeded, the driveshaft must be removed by a qualified technician or transmission damage will result.

If the vehicle is towed by other means or incorrectly, vehicle damage may occur.

When calling for a tow truck, tell the operator what kind of vehicle you have.

Roadside Emergencies

Emergency towing

In case of a roadside emergency with a disabled vehicle (without access to wheel dollies, car hauling trailer, or flatbed transport vehicle) your vehicle (regardless of transmission powertrain configuration) can be flat towed (all wheels on the ground) under the following conditions:

- Vehicle is facing forward so that it is being towed in a forward direction.
- Place the transmission in N (Neutral). Refer to *Brake shift interlock* in the *Driving* chapter for specific instructions if you cannot move the gear shift lever into N (Neutral).
- Maximum speed is not to exceed 35 mph (56 km/h).
- Maximum distance is 50 miles (80 km).

Customer Assistance

GETTING THE SERVICES YOU NEED

At home

You must take your Ford vehicle to an authorized dealer for warranty repairs. While any authorized dealer handling your vehicle line will provide warranty service, we recommend you return to your selling authorized dealer who wants to ensure your continued satisfaction. Please note that certain warranty repairs require special training and/or equipment, so not all authorized dealers are authorized to perform all warranty repairs. This means that, depending on the warranty repair needed, you may have to take your vehicle to another authorized dealer. In certain instances, Ford may authorize that your vehicle be repaired at a repair center other than an authorized dealer facility. A reasonable time must be allowed to perform a repair after taking your vehicle to the authorized dealer. Repairs will be made using Ford or Motorcraft parts, or remanufactured or other parts that are authorized by Ford.

If you have questions or concerns, or are unsatisfied with the service you are receiving, follow these steps:

1. Contact your Sales Representative or Service Advisor at your selling/servicing authorized dealer.
2. If your inquiry or concern remains unresolved, contact the Sales Manager Service Manager or Customer Relations Manager.
3. If you require assistance or clarification on Ford Motor Company policies or procedures, please contact the Ford Customer Relationship Center at 1-800-392-3673 (FORD).

Away from home

If you own a motorhome built on a Ford Chassis and are away from home when your vehicle needs service, or if you need more help than the authorized dealer could provide, after following the steps above, contact the Ford Motorhome Customer Assistance Center to find an authorized dealer or service location to help you. In the United States and Canada:

Ford Motorhome Customer Assistance Center
900 N. Lake Havasu Avenue
Lake Havasu City, AZ
1-800-444-3311
Open 365/24/7

Customer Assistance

In order to help service your motorhome vehicle, please have the following information available when contacting the Motorhome Customer Assistance Center:

- telephone number where you can be reached
- vehicle location (city and state)
- year and make of your vehicle
- date of vehicle purchase
- current odometer reading
- vehicle identification number (VIN).

IN CALIFORNIA (U.S. ONLY)

California Civil Code Section 1793.2(d) requires that, if a manufacturer or its representative is unable to repair a motor vehicle to conform to the vehicle's applicable express warranty after a reasonable number of attempts, the manufacturer shall be required to either replace the vehicle with one substantially identical or repurchase the vehicle and reimburse the buyer in an amount equal to the actual price paid or payable by the consumer (less a reasonable allowance for consumer use). The consumer has the right to choose whether to receive a refund or replacement vehicle.

California Civil Code Section 1793.22(b) presumes that the manufacturer has had a reasonable number of attempts to conform the vehicle to its applicable express warranties if, within the first 18 months of ownership of a new vehicle or the first 18,000 miles (29,000 km), whichever occurs first:

1. Two or more repair attempts are made on the same non-conformity likely to cause death or serious bodily injury OR
2. Four or more repair attempts are made on the same nonconformity (a defect or condition that substantially impairs the use, value or safety of the vehicle) OR
3. The vehicle is out of service for repair of nonconformities for a total of more than 30 calendar days (not necessarily all at one time)

In the case of 1 or 2 above, the consumer must also notify the manufacturer of the need for the repair of the nonconformity at the following address:

Ford Motor Company
16800 Executive Plaza Drive
Mail Drop 3NE-B
Dearborn, MI 48126

Customer Assistance

THE BETTER BUSINESS BUREAU (BBB) AUTO LINE PROGRAM (U.S. ONLY)

Your satisfaction is important to Ford Motor Company and to your dealer. If a warranty concern has not been resolved using the three-step procedure outlined on the first page of the *Customer Assistance* section, you may be eligible to participate in the BBB AUTO LINE program.

The BBB AUTO LINE program consists of two parts – mediation and arbitration. During mediation, a representative of the BBB will contact both you and Ford Motor Company to explore options for settlement of the claim. If an agreement is not reached during mediation and your claim is eligible, you may participate in the arbitration process. An arbitration hearing will be scheduled so that you can present your case in an informal setting before an impartial person. The arbitrator will consider the testimony provided and make a decision after the hearing.

You are not bound by the decision, but should you choose to accept the BBB AUTO LINE decision, Ford must abide by the accepted decision as well. Disputes submitted to the BBB AUTO LINE program are usually decided within forty days after you file your claim with the BBB.

BBB AUTO LINE Application: Using the information provided below, please call or write to request a program application. You will be asked for your name and address, general information about your new vehicle, information about your warranty concerns, and any steps you have already taken to try to resolve them. A Customer Claim Form will be mailed that will need to be completed, signed and returned to the BBB along with proof of ownership. Upon receipt, the BBB will review the claim for eligibility under the Program Summary Guidelines.

You can get more information by calling BBB AUTO LINE at 1-800-955-5100, or writing to:

**BBB AUTO LINE
4200 Wilson Boulevard, Suite 800
Arlington, Virginia 22203-1833**

BBB AUTO LINE applications can also be requested by calling the Ford Motor Company Customer Relationship Center at 1-800-392-3673.

Note: Ford Motor Company reserves the right to change eligibility limitations, modify procedures, or to discontinue this process at any time without notice and without obligation.

UTILIZING THE MEDIATION/ARBITRATION PROGRAM (CANADA ONLY)

For vehicles delivered to authorized Canadian dealers. In those cases where you continue to feel that the efforts by Ford of Canada and the

Customer Assistance

authorized dealer to resolve a factory-related vehicle service concern have been unsatisfactory, Ford of Canada participates in an impartial third party mediation/arbitration program administered by the Canadian Motor Vehicle Arbitration Plan (CAMVAP).

The CAMVAP program is a straight-forward and relatively speedy alternative to resolve a disagreement when all other efforts to produce a settlement have failed. This procedure is without cost to you and is designed to eliminate the need for lengthy and expensive legal proceedings.

In the CAMVAP program, impartial third-party arbitrators conduct hearings at mutually convenient times and places in an informal environment. These impartial arbitrators review the positions of the parties, make decisions and, when appropriate, render awards to resolve disputes. CAMVAP decisions are fast, fair, and final as the arbitrator's award is binding both to you and Ford of Canada.

CAMVAP services are available in all territories and provinces. For more information, without charge or obligation, call your CAMVAP Provincial Administrator directly at 1-800-207-0685.

FORD EXTENDED SERVICE PLAN

You can get more protection for your new car or light truck by purchasing Ford Extended Service Plan (Ford ESP) coverage. It provides the following:

- Benefits during the warranty period depending on the plan you purchase (such as: reimbursement for rentals; coverage for certain maintenance and wear items).
- Protection against covered repair costs after your Bumper-to-Bumper Warranty expires.

You may purchase Ford ESP from any participating authorized dealer. There are several plans available in various time, distance and deductible combinations which can be tailored to fit your own driving needs. Ford ESP also offers reimbursement benefits for towing and rental coverage.

When you buy Ford ESP, you receive Peace-of-Mind protection throughout the United States and Canada, provided by a network of more than 4,600 participating authorized dealers.

If you did not take advantage of the Ford Extended Service Plan at the time of purchasing your vehicle, you may still be eligible. Since this information is subject to change, please ask your authorized dealer for complete details about Ford Extended Service Plan coverage options, or visit the Ford ESP website at www.ford-esp.com.

Customer Assistance

GETTING ASSISTANCE OUTSIDE THE U.S. AND CANADA

Before exporting your vehicle to a foreign country, contact the appropriate foreign embassy or consulate. These officials can inform you of local vehicle registration regulations and where to find unleaded fuel.

If you cannot find unleaded fuel or can only get fuel with an anti-knock index lower than is recommended for your vehicle, contact a regional office or owner relations/customer relationship office.

The use of leaded fuel in your vehicle without proper conversion may damage the effectiveness of your emission control system and may cause engine knocking or serious engine damage. Ford Motor Company/Ford of Canada is not responsible for any damage caused by use of improper fuel. Using leaded fuel may also result in difficulty importing your vehicle back into the U.S.

If your vehicle must be serviced while you are traveling or living in Central America, the Caribbean, or the Middle East, contact the nearest authorized dealer. If the authorized dealer cannot help you, contact:

FORD MOTOR COMPANY
FORD EXPORT OPERATIONS
1555 Fairlane Drive
Fairlane Business Park #3
Allen Park, Michigan 48101
U.S.A.
Telephone: (313) 594-4857
FAX: (313) 390-0804
Email: expcac@ford.com

If you are in another foreign country, contact the nearest authorized dealer. If the authorized dealer employees cannot help you, they can direct you to the nearest Ford affiliate office.

If you buy your vehicle in North America and then relocate outside of the U.S. or Canada, register your vehicle identification number (VIN) and new address with Ford Motor Company Export Operations.

Customers in the U.S. should call 1-800-392-3673.

Customer Assistance

ORDERING ADDITIONAL OWNER'S LITERATURE

To order the publications in this portfolio, contact Helm, Incorporated at:

HELM, INCORPORATED
P.O. Box 07150
Detroit, Michigan 48207

Or to order a free publication catalog, call toll free: 1-800-782-4356
Monday-Friday 8:00 a.m. - 6:00 p.m. EST

Helm, Incorporated can also be reached by their website:
www.helminc.com.

(Items in this catalog may be purchased by credit card, check or money order.)

Obtaining a French owner's guide

French Owner's Guides can be obtained from your authorized dealer or by writing to:

Ford Motor Company of Canada, Limited
Service Publications CHQ202
The Canadian Road
P.O. Box 2000
Oakville, ON, Canada
L6J 5E4

REPORTING SAFETY DEFECTS (U.S. ONLY)

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying Ford Motor Company.



If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or Ford Motor Company.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); go to <http://www.safercar.gov>; or write to:

Administrator
1200 New Jersey Avenue, Southeast
Washington, D.C. 20590

Customer Assistance

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

REPORTING SAFETY DEFECTS (CANADA ONLY)

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform Transport Canada, using their toll-free number: 1-800-333-0510.

CLEANING THE WHEELS

- Clean weekly with Motorcraft Wheel and Tire Cleaner (ZC-37-A), which is available from your dealer. Heavy dirt and brake dust accumulation may require agitation with a sponge. Rinse thoroughly with a strong stream of water.
- Never apply any cleaning chemical to hot or warm wheel rims or covers.
- Some automatic car washes may cause damage to the finish on your wheel rims or covers. Chemical-strength cleaners, or cleaning chemicals, in combination with brush agitation to remove brake dust and dirt, could wear away the clearcoat finish over time.
- Do not use hydrofluoric acid-based or high caustic-based wheel cleaners, steel wool, fuels or strong household detergent.
- To remove tar and grease, use Motorcraft Bug and Tar Remover (ZC-42), available from your dealer.

ENGINE

Engines are more efficient when they are clean because grease and dirt buildup keep the engine warmer than normal. When washing:

- Take care when using a power washer to clean the engine. The high-pressure fluid could penetrate the sealed parts and cause damage.
- Do not spray a hot engine with cold water to avoid cracking the engine block or other engine components.
- Spray Motorcraft Engine Shampoo and Degreaser (ZC-20) on all parts that require cleaning and pressure rinse clean. In Canada use Motorcraft Engine Shampoo (CXC-66-A).
- Never wash or rinse the engine while it is running; water in the running engine may cause internal damage.

UNDERBODY

Flush the complete underside of your vehicle frequently. Keep body and door drain holes free from packed dirt.

Maintenance and Specifications

SERVICE RECOMMENDATIONS

To help you service your vehicle, we provide *scheduled maintenance information* which makes tracking routine service easy.

If your vehicle requires professional service, your authorized dealer can provide the necessary parts and service. Check your *Warranty Guide/Customer Information Guide* to find out which parts and services are covered.

Use only recommended fuels, lubricants, fluids and service parts conforming to specifications. Motorcraft parts are designed and built to provide the best performance in your vehicle.

PRECAUTIONS WHEN SERVICING YOUR VEHICLE

- Do not work on a hot engine.
- Make sure that nothing gets caught in moving parts.
- Do not work on a vehicle with the engine running in an enclosed space, unless you are sure you have enough ventilation.
- Keep all open flames and other lit material away from the battery and all fuel related parts.

Working with the engine off

1. Set the parking brake and shift to P (Park).
2. Turn off the engine and remove the key.
3. Block the wheels.

Working with the engine on

1. Set the parking brake and shift to P (Park).
2. Block the wheels.

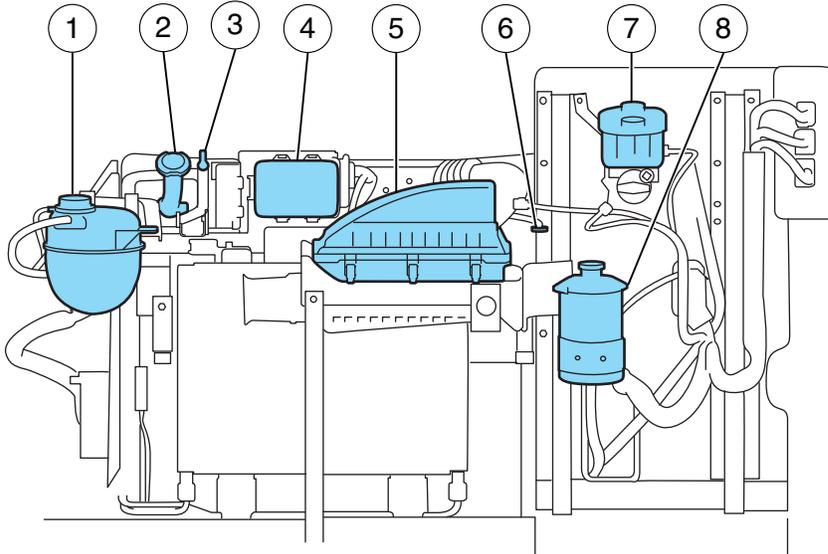


WARNING: To reduce the risk of vehicle damage and/or personal burn injuries, do not start your engine with the air cleaner removed and do not remove it while the engine is running.

Maintenance and Specifications

IDENTIFYING COMPONENTS IN THE ENGINE COMPARTMENT

6.8L V10 engine



1. Engine coolant reservoir
2. Engine oil filler cap
3. Automatic transmission fluid dipstick
4. Power distribution box
5. Air filter assembly
6. Engine oil dipstick
7. Brake fluid reservoir
8. Power steering fluid reservoir

ENGINE OIL

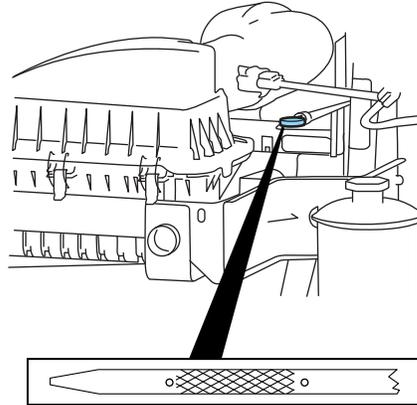
Checking the engine oil

Refer to *scheduled maintenance information* for the appropriate intervals for checking the engine oil.

1. Make sure the vehicle is on level ground.

Maintenance and Specifications

2. Turn the engine off and wait 15 minutes for the oil to drain into the oil pan.
3. Set the parking brake and ensure the gearshift is securely latched in P (Park).
4. Open the hood. Protect yourself from engine heat.
5. Locate and carefully remove the engine oil level dipstick.



6. Wipe the dipstick clean. Insert the dipstick fully, then remove it again.
 - If the oil level is **within the lower and upper holes**, the oil level is acceptable. **DO NOT ADD OIL.**
 - If the oil level is **below the lower hole**, engine oil must be added to raise the level within the normal operating range.
 - **Do not overfill the engine with oil. Oil levels above the upper hole mark may cause engine damage.** If the engine is overfilled, some oil must be removed from the engine by an authorized dealer.
7. Put the dipstick back in and ensure it is fully seated.

Adding engine oil

1. Check the engine oil. For instructions, refer to *Checking the engine oil* in this chapter.
2. If the engine oil level is not within the normal operating range, add only certified engine oil of the recommended viscosity. Remove the engine oil filler cap and use a funnel to pour the engine oil into the opening.
3. Recheck the engine oil level. Make sure the oil level is not above the normal operating range on the engine oil level dipstick.

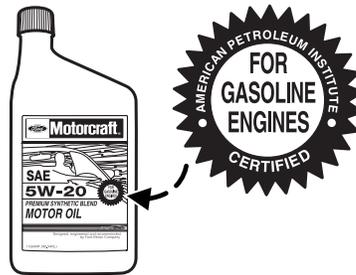
Maintenance and Specifications

4. Install the dipstick and ensure it is fully seated.
5. Fully install the engine oil filler cap by turning the filler cap clockwise until three clicks can be heard.

To avoid possible oil loss, DO NOT operate the vehicle with the engine oil level dipstick and/or the engine oil filler cap removed.

Engine oil and filter recommendations

Look for this certification trademark.



Use SAE 5W-20 engine oil

Only use oils “Certified For Gasoline Engines” by the American Petroleum Institute (API). An oil with this trademark symbol conforms to the current engine and emission system protection standards and fuel economy requirements of the International Lubricant Standardization and Approval Committee (ILSAC), comprised of U.S. and Japanese automobile manufacturers.

To protect your engine and engine’s warranty, use Motorcraft SAE 5W-20 or an equivalent SAE 5W-20 oil meeting Ford specification WSS-M2C930-A. **SAE 5W-20 oil provides optimum fuel economy and durability performance meeting all requirements for your vehicle’s engine.**

Do not use supplemental engine oil additives, cleaners or other engine treatments. They are unnecessary and could lead to engine damage that is not covered by Ford warranty.

Change your engine oil and filter according to the appropriate schedule listed in the *scheduled maintenance information*.

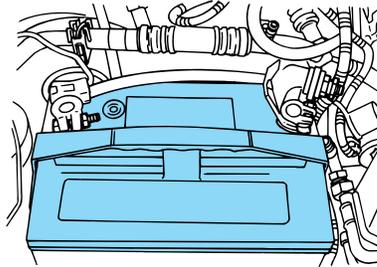
Ford production and Motorcraft replacement oil filters are designed for added engine protection and long life. If a replacement oil filter is used that does not meet Ford material and design specifications, start-up engine noises or knock may be experienced.

It is recommended you use the appropriate Motorcraft oil filter or another with equivalent performance for your engine application.

Maintenance and Specifications

BATTERY

Your vehicle is equipped with a Motorcraft maintenance-free battery which normally does not require additional water during its life of service.



If your battery has a cover/shield, make sure it is reinstalled after the battery has been cleaned or replaced.

For longer, trouble-free operation, keep the top of the battery clean and dry. Also, make certain the battery cables are always tightly fastened to the battery terminals.

If you see any corrosion on the battery or terminals, remove the cables from the terminals and clean with a wire brush. You can neutralize the acid with a solution of baking soda and water.

It is recommended that the negative battery cable terminal be disconnected from the battery if you plan to store your vehicle for an extended period of time. This will minimize the discharge of your battery during storage.

Note: Electrical or electronic accessories or components added to the vehicle by the dealer or the owner may adversely affect battery performance and durability.



WARNING: Batteries normally produce explosive gases which can cause personal injury. Therefore, do not allow flames, sparks or lighted substances to come near the battery. When working near the battery, always shield your face and protect your eyes. Always provide proper ventilation.



WARNING: When lifting a plastic-cased battery, excessive pressure on the end walls could cause acid to flow through the vent caps, resulting in personal injury and/or damage to the vehicle or battery. Lift the battery with a battery carrier or with your hands on opposite corners.

Maintenance and Specifications



WARNING: Keep batteries out of reach of children. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Shield your eyes when working near the battery to protect against possible splashing of acid solution. In case of acid contact with skin or eyes, flush immediately with water for a minimum of 15 minutes and get prompt medical attention. If acid is swallowed, call a physician immediately.



WARNING: Battery posts, terminals and related accessories contain lead and lead compounds. **Wash hands after handling.**

To account for customer driving habits and conditions, your automatic transmission electronically controls the shift quality by using an adaptive learning strategy. The adaptive learning strategy is maintained by power from the battery. When the battery is disconnected or a new battery is installed, the transmission must relearn its adaptive strategy. Optimal shifting will resume within a few hundred kilometers (miles) of operation.

If the shift quality does not improve within a few hundred kilometers (miles) of operation, or if the downshifts and other throttle conditions do not function normally or after a long deceleration period, see your authorized dealer or a qualified service technician as soon as possible.

Because your vehicle's engine is also electronically controlled by a computer, some control conditions are maintained by power from the battery. When the battery is disconnected or a new battery is installed, the engine must relearn its idle and fuel trim strategy for optimum driveability and performance. To begin this process:

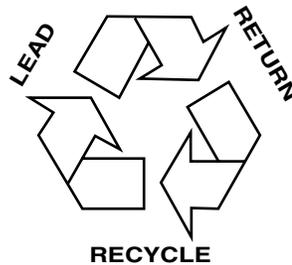
1. With the vehicle at a complete stop, set the parking brake.
 2. Put the gearshift in P (Park), turn off all accessories and start the engine.
 3. Run the engine until it reaches normal operating temperature.
 4. Allow the engine to idle for at least one minute.
 5. Turn the A/C on and allow the engine to idle for at least one minute.
 6. With your foot on the brake pedal and with the A/C on, put the vehicle in D (Drive) and allow the engine to idle for at least one minute.
 7. Drive the vehicle to complete the relearning process.
- The vehicle may need to be driven 10 miles (16 km) or more to relearn the idle and fuel trim strategy.

Maintenance and Specifications

- **If you do not allow the engine to relearn its idle trim, the idle quality of your vehicle may be adversely affected until the idle trim is eventually relearned.**

If the battery has been disconnected or a new battery has been installed, the clock and the preset radio stations must be reset once the battery is reconnected.

- Always dispose of automotive batteries in a responsible manner. Follow your local authorized standards for disposal. Call your local authorized recycling center to find out more about recycling automotive batteries.



ENGINE COOLANT

Checking engine coolant

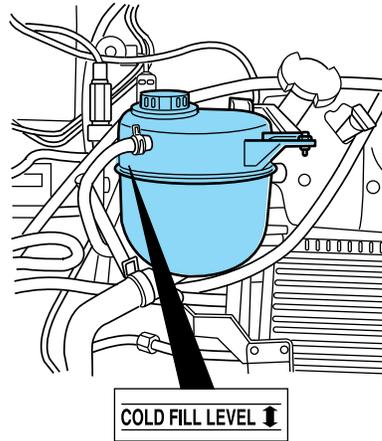
The concentration and level of engine coolant should be checked at the intervals listed in *scheduled maintenance information*. The coolant concentration should be maintained at 50/50 coolant and distilled water, which equates to a freeze point of -34°F (-36°C). Coolant concentration testing is possible with a hydrometer or antifreeze tester (such as the Rotunda Battery and Antifreeze Tester, 014-R1060). The level of coolant should be maintained at the "FULL COLD" level or within the "COLD FILL RANGE" in the coolant reservoir. If the level falls below, add coolant per the instructions in the *Adding engine coolant* section.

Your vehicle was factory-filled with a 50/50 engine coolant and water concentration. If the concentration of coolant falls below 40% or above 60%, the engine parts could become damaged or not work properly. **A 50/50 mixture of coolant and water provides the following:**

- **Freeze protection down to -34°F (-36°C).**
- **Boiling protection up to 265°F (129°C).**
- **Protection against rust and other forms of corrosion.**
- **Proper function of calibrated gauges.**

Maintenance and Specifications

When the engine is cold, check the level of the engine coolant in the reservoir.



- The engine coolant should be at the “FULL COLD” level or within the “COLD FILL RANGE” as listed on the engine coolant reservoir (depending upon application).
- Refer to *scheduled maintenance information* for service interval schedules.
- Be sure to read and understand *Precautions when servicing your vehicle* in this chapter.

If the engine coolant has not been checked at the recommended interval, the engine coolant reservoir may become low or empty. If the reservoir is low or empty, add engine coolant to the reservoir. Refer to *Adding engine coolant* in this chapter.

Note: Automotive fluids are not interchangeable; do not use engine coolant, antifreeze or windshield washer fluid outside of its specified function and vehicle location.

Adding engine coolant

When adding coolant, make sure it is a 50/50 mixture of engine coolant and distilled water. **When the engine is cool**, add the mixture to the coolant reservoir until the appropriate fill level is obtained.



WARNING: Do not add engine coolant when the engine is hot. Steam and scalding liquids released from a hot cooling system can burn you badly. Also, you can be burned if you spill coolant on hot engine parts.

Maintenance and Specifications



WARNING: Do not put engine coolant in the windshield washer fluid container. If sprayed on the windshield, engine coolant could make it difficult to see through the windshield.

- **Add Motorcraft Premium Gold Engine Coolant or equivalent meeting Ford specification WSS-M97B51-A1.** Refer to *Maintenance product specifications and capacities* in this chapter.

Note: Use of Motorcraft Cooling System Stop Leak Pellets or an equivalent product meeting Ford specification WSS-M99B37-B6, may darken the color of Motorcraft Premium Gold Engine Coolant from yellow to golden tan.

- **Do not add/mix an orange-colored, extended life coolant such as Motorcraft Specialty Orange Engine Coolant, meeting Ford specification WSS-M97B44-D, or DEX-COOL® brand with the factory-filled coolant.** Mixing Motorcraft Specialty Orange Engine Coolant or any orange-colored extended life product such as DEX-COOL® brand with your factory filled coolant can result in degraded corrosion protection.
- A large amount of water without engine coolant may be added, in case of emergency, to reach a vehicle service location. In this instance, the cooling system must be drained and refilled with a 50/50 mixture of engine coolant and distilled water as soon as possible. Water alone (without engine coolant) can cause engine damage from corrosion, overheating or freezing.
- **Do not use alcohol, methanol, brine or any engine coolants mixed with alcohol or methanol antifreeze (coolant).** Alcohol and other liquids can cause engine damage from overheating or freezing.
- **Do not add extra inhibitors or additives to the coolant.** These can be harmful and compromise the corrosion protection of the engine coolant.

For vehicles with overflow coolant systems with a non-pressurized cap on the coolant recovery system, add coolant to the coolant recovery reservoir when the engine is cool. Add the proper mixture of coolant and water to the "FULL COLD" level. For all other vehicles which have a coolant degas system with a pressurized cap, or if it is necessary to remove the coolant pressure relief cap on the radiator of a vehicle with an overflow system, follow these steps to add engine coolant.

Maintenance and Specifications



WARNING: To reduce the risk of personal injury, make sure the engine is cool before unscrewing the coolant pressure relief cap. The cooling system is under pressure; steam and hot liquid can come out forcefully when the cap is loosened slightly.

Add the proper mixture of coolant and water to the cooling system by following these steps:

1. Before you begin, turn the engine off and let it cool.
2. When the engine is cool, wrap a thick cloth around the coolant pressure relief cap on the coolant reservoir (a translucent plastic bottle). Slowly turn cap counterclockwise (left) until pressure begins to release.
3. Step back while the pressure releases.
4. When you are sure that all the pressure has been released, use the cloth to turn it counterclockwise and remove the cap.
5. Fill the coolant reservoir slowly with the proper coolant mixture, to within the “COLD FILL RANGE” or the “FULL COLD” level on the reservoir. If you removed the radiator cap in an overflow system, fill the radiator until the coolant is visible and radiator is almost full.
6. Replace the cap. Turn until tightly installed. Cap must be tightly installed to prevent coolant loss.

After any coolant has been added, check the coolant concentration (refer to *Checking engine coolant*). If the concentration is not 50/50 (protection to $-34^{\circ}\text{F}/-36^{\circ}\text{C}$), drain some coolant and adjust the concentration. It may take several drains and additions to obtain a 50/50 coolant concentration.

Whenever coolant has been added, the coolant level in the coolant reservoir should be checked the next few times you drive the vehicle. If necessary, add enough 50/50 concentration of engine coolant and distilled water to bring the liquid level to the proper level.

If you have to add more than 1.0 quart (1.0 liter) of engine coolant per month, have your authorized dealer check the engine cooling system. Your cooling system may have a leak. Operating an engine with a low level of coolant can result in engine overheating and possible engine damage.

Recycled engine coolant

Ford Motor Company does NOT recommend the use of recycled engine coolant in vehicles originally equipped with Motorcraft Premium Gold Engine Coolant since a Ford-approved recycling process is not yet available.

Maintenance and Specifications



Used engine coolant should be disposed of in an appropriate manner. Follow your community's regulations and standards for recycling and disposing of automotive fluids.

Coolant refill capacity

To find out how much fluid your vehicle's cooling system can hold, refer to *Maintenance product specifications and capacities* in this chapter.

Fill your engine coolant reservoir as outlined in *Adding engine coolant* in this section.

Severe climates

If you drive in extremely cold climates (less than -34°F [-36°C]):

- **It may be necessary to increase the coolant concentration above 50%.**
- **NEVER increase the coolant concentration above 60%.**
- **Increased engine coolant concentrations above 60% will decrease the overheat protection characteristics of the engine coolant and may cause engine damage.**
- **Refer to the chart on the coolant container to ensure the coolant concentration in your vehicle will provide adequate freeze protection at the temperatures in which you drive in the winter months.**

If you drive in extremely hot climates:

- **It is still necessary to maintain the coolant concentration above 40%.**
- **NEVER decrease the coolant concentration below 40%.**
- **Decreased engine coolant concentrations below 40% will decrease the corrosion protection characteristics of the engine coolant and may cause engine damage.**
- **Decreased engine coolant concentrations below 40% will decrease the freeze protection characteristics of the engine coolant and may cause engine damage.**
- **Refer to the chart on the coolant container to ensure the coolant concentration in your vehicle will provide adequate protection at the temperatures in which you drive.**

Vehicles driven year-round in non-extreme climates should use a 50/50 mixture of engine coolant and distilled water for optimum cooling system and engine protection.

Maintenance and Specifications

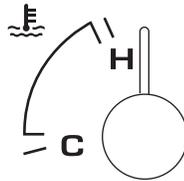
What you should know about fail-safe cooling

If the engine coolant supply is depleted, this feature allows the vehicle to be driven temporarily before incremental component damage is incurred. The “fail-safe” distance depends on ambient temperatures, vehicle load and terrain.

How fail-safe cooling works

If the engine begins to overheat:

- The engine coolant temperature gauge will move to the red (hot) area.
- CHECK GAUGES will illuminate in the mini message center.
- The *Service engine soon* indicator light will illuminate.



If the engine reaches a preset over-temperature condition, the engine will automatically switch to alternating cylinder operation. Each disabled cylinder acts as an air pump and cools the engine.

When this occurs the vehicle will still operate. However:

- The engine power will be limited.
- The air conditioning system will be disabled.

Continued operation will increase the engine temperature and the engine will completely shut down, causing steering and braking effort to increase.

Once the engine temperature cools, the engine can be re-started. Take your vehicle to an authorized dealer as soon as possible to minimize engine damage.

When fail-safe mode is activated

You have limited engine power when in the fail-safe mode, so drive the vehicle with caution. The vehicle will not be able to maintain high-speed operation and the engine will run rough. Remember that the engine is capable of completely shutting down automatically to prevent engine damage, therefore:

1. Pull off the road as soon as safely possible and turn off the engine.
2. Arrange for the vehicle to be taken to an authorized dealer.
3. If this is not possible, wait a short period for the engine to cool.
4. Check the coolant level and replenish if low.

Maintenance and Specifications



WARNING: Never remove the coolant reservoir cap while the engine is running or hot.

5. Re-start the engine and take your vehicle to an authorized dealer.

Driving the vehicle without repairing the engine problem increases the chance of engine damage. Take your vehicle to an authorized dealer as soon as possible.

FUEL FILTER

For fuel filter replacement, see your authorized dealer. Refer to *scheduled maintenance information* for the appropriate intervals for changing the fuel filter.

Replace the fuel filter with an authorized Motorcraft part. The customer warranty may be void for any damage to the fuel system if an authorized Motorcraft fuel filter is not used.

WHAT YOU SHOULD KNOW ABOUT AUTOMOTIVE FUELS

Important safety precautions



WARNING: Do not overfill the fuel tank. The pressure in an overfilled tank may cause leakage and lead to fuel spray and fire.



WARNING: The fuel system may be under pressure. If the fuel filler cap is venting vapor or if you hear a hissing sound, wait until it stops before completely removing the fuel filler cap. Otherwise, fuel may spray out and injure you or others.



WARNING: If you do not use the proper fuel filler cap, excessive vacuum in the fuel tank may damage the fuel system or cause the fuel cap to disengage in a collision, which may result in possible personal injury.



WARNING: Automotive fuels can cause serious injury or death if misused or mishandled.



WARNING: Gasoline may contain benzene, which is a cancer-causing agent.

Maintenance and Specifications

Observe the following guidelines when handling automotive fuel:

- Extinguish all smoking materials and any open flames before refueling your vehicle.
- Always turn off the vehicle before refueling.
- Automotive fuels can be harmful or fatal if swallowed. Fuel such as gasoline is highly toxic and if swallowed can cause death or permanent injury. If fuel is swallowed, call a physician immediately, even if no symptoms are immediately apparent. The toxic effects of fuel may not be visible for hours.
- Avoid inhaling fuel vapors. Inhaling too much fuel vapor of any kind can lead to eye and respiratory tract irritation. In severe cases, excessive or prolonged breathing of fuel vapor can cause serious illness and permanent injury.
- Avoid getting fuel liquid in your eyes. If fuel is splashed in the eyes, remove contact lenses (if worn), flush with water for 15 minutes and seek medical attention. Failure to seek proper medical attention could lead to permanent injury.
- Fuels can also be harmful if absorbed through the skin. If fuel is splashed on the skin and/or clothing, promptly remove contaminated clothing and wash skin thoroughly with soap and water. Repeated or prolonged skin contact with fuel liquid or vapor causes skin irritation.
- Be particularly careful if you are taking “Antabuse” or other forms of disulfiram for the treatment of alcoholism. Breathing gasoline vapors, or skin contact could cause an adverse reaction. In sensitive individuals, serious personal injury or sickness may result. If fuel is splashed on the skin, promptly wash skin thoroughly with soap and water. Consult a physician immediately if you experience an adverse reaction.



 **WARNING:** When refueling always shut the engine off and never allow sparks or open flames near the filler neck. Never smoke while refueling. Fuel vapor is extremely hazardous under certain conditions. Care should be taken to avoid inhaling excess fumes.

 **WARNING:** The flow of fuel through a fuel pump nozzle can produce static electricity, which can cause a fire if fuel is pumped into an ungrounded fuel container.

Maintenance and Specifications

Refueling



WARNING: Fuel vapor burns violently and a fuel fire can cause severe injuries. To help avoid injuries to you and others:

- **Read and follow all the instructions on the pump island;**
- **Turn off your engine when you are refueling;**
- **Do not smoke if you are near fuel or refueling your vehicle;**
- **Keep sparks, flames and smoking materials away from fuel;**
- **Stay outside your vehicle and do not leave the fuel pump unattended when refueling your vehicle — this is against the law in some places;**
- **Keep children away from the fuel pump; never let children pump fuel.**

If you must replace the fuel filler cap, replace it with a fuel filler cap that is designed for your vehicle. The customer warranty may be void for any damage to the fuel tank or fuel system if the correct genuine Ford fuel filler cap is not used.

Use the following guidelines to avoid electrostatic charge build-up when filling an ungrounded fuel container:

- Place approved fuel container on the ground.
- DO NOT fill a fuel container while it is in the vehicle (including the cargo area).
- Keep the fuel pump nozzle in contact with the fuel container while filling.
- DO NOT use a device that would hold the fuel pump handle in the fill position.

FORD RECOMMENDS BP



Maintenance and Specifications

Choosing the right fuel

Use only UNLEADED fuel or UNLEADED fuel blended with a maximum of 10% ethanol. Do not use fuel ethanol (E85), diesel, methanol, leaded fuel or any other fuel. The use of leaded fuel is prohibited by law and could damage your vehicle.

Your vehicle was not designed to use fuel or fuel additives with metallic compounds, including manganese-based additives.

Note: Use of any fuel other than those recommended may cause powertrain damage, a loss of vehicle performance, and repairs may not be covered under warranty.

Octane recommendations

Your vehicle is designed to use “Regular” unleaded gasoline with a pump (R+M)/2 octane rating of 87.

We do not recommend the use of gasolines labeled as “Regular” in

high altitude areas that are sold with octane ratings less than 87.



Do not be concerned if your engine sometimes knocks lightly. However, if it knocks heavily under most driving conditions while you are using fuel with the recommended octane rating, see your authorized dealer to prevent any engine damage.

Fuel quality

If you are experiencing starting, rough idle or hesitation driveability problems, try a different brand of unleaded gasoline. “Premium” unleaded gasoline is not recommended for vehicles designed to use “Regular” unleaded gasoline because it may cause these problems to become more pronounced. If the problems persist, see your authorized dealer.

Do not add aftermarket fuel additive products to your fuel tank. It should not be necessary to add any aftermarket products to your fuel tank if you continue to use high quality fuel of the recommended octane rating. These products have not been approved for your engine and could cause damage to the fuel system. Repairs to correct the effects of using an aftermarket product in your fuel may not be covered by your warranty.

Many of the world’s automakers approved the World-Wide Fuel Charter that recommends gasoline specifications to provide improved performance and emission control system protection for your vehicle.

Maintenance and Specifications

Gasolines that meet the World-Wide Fuel Charter should be used when available. Ask your fuel supplier about gasolines that meet the World-Wide Fuel Charter.

Cleaner air

Ford endorses the use of reformulated “cleaner-burning” gasolines to improve air quality, per the recommendations in the *Choosing the right fuel* section.

Running out of fuel

Avoid running out of fuel because this situation may have an adverse effect on powertrain components.

If you have run out of fuel:

- You may need to cycle the ignition from off to on several times after refueling to allow the fuel system to pump the fuel from the tank to the engine. On restarting, cranking time will take a few seconds longer than normal.
- Normally, adding 1 gallon (3.8L) of fuel is enough to restart the engine. If the vehicle is out of fuel and on a steep grade, more than 1 gallon (3.8L) may be required.
- The *Service engine soon*  indicator may come on. For more information on the *Service engine soon*  indicator, refer to *Warning lights and chimes* in the *Instrument Cluster* chapter.

ESSENTIALS OF GOOD FUEL ECONOMY

Measuring techniques

Your best source of information about actual fuel economy is you, the driver. You must gather information as accurately and consistently as possible. Fuel expense, frequency of fill-ups or fuel gauge readings are NOT accurate as a measure of fuel economy. We do not recommend taking fuel economy measurements during the first 1,000 miles (1,600 km) of driving (engine break-in period). You will get a more accurate measurement after 2,000 miles–3,000 miles (3,000 km–5,000 km).

Filling the tank

The advertised fuel capacity of the fuel tank on your vehicle is equal to the rated refill capacity of the fuel tank as listed in the *Maintenance product specifications and capacities* section of this chapter.

Maintenance and Specifications

The advertised capacity is the amount of the indicated capacity and the empty reserve combined. Indicated capacity is the difference in the amount of fuel in a full tank and a tank when the fuel gauge indicates empty. Empty reserve is the small amount of fuel remaining in the fuel tank after the fuel gauge indicates empty.

The amount of usable fuel in the empty reserve varies and should not be relied upon to increase driving range. When refueling your vehicle after the fuel gauge indicates empty, you might not be able to refuel the full amount of the advertised capacity of the fuel tank due to the empty reserve still present in the tank.

For consistent results when filling the fuel tank:

- Turn the engine/ignition switch to the off position prior to refueling, an error in the reading will result if the engine is left running.
- Use the same filling rate setting (low — medium — high) each time the tank is filled.
- Allow no more than two automatic click-offs when filling.
- Always use fuel with the recommended octane rating.
- Use a known quality gasoline, preferably a national brand.
- Use the same side of the same pump and have the vehicle facing the same direction each time you fill up.
- Have the vehicle loading and distribution the same every time.

Your results will be most accurate if your filling method is consistent.

Calculating fuel economy

1. Fill the fuel tank completely and record the initial odometer reading (in miles or kilometers).
2. Each time you fill the tank, record the amount of fuel added (in gallons or liters).
3. After at least three to five tank fill-ups, fill the fuel tank and record the current odometer reading.
4. Subtract your initial odometer reading from the current odometer reading.
5. Follow one of the simple calculations in order to determine fuel economy:

Calculation 1: **Divide total miles traveled by total gallons used.**

Calculation 2: **Multiply liters used by 100, then divide by total kilometers traveled.**

Maintenance and Specifications

Keep a record for at least one month and record the type of driving (city or highway). This will provide an accurate estimate of the vehicle's fuel economy under current driving conditions. Additionally, keeping records during summer and winter will show how temperature impacts fuel economy. In general, lower temperatures give lower fuel economy.

Driving style — good driving and fuel economy habits

Give consideration to the lists that follow and you may be able to change a number of variables and improve your fuel economy.

Habits

- Smooth, moderate operation can yield up to 10% savings in fuel.
- Steady speeds without stopping will usually give the best fuel economy.
- Idling for long periods of time (greater than one minute) may waste fuel.
- Anticipate stopping; slowing down may eliminate the need to stop.
- Sudden or hard accelerations may reduce fuel economy.
- Slow down gradually.
- Driving at reasonable speeds (traveling at 55 mph [88 km/h] uses 15% less fuel than traveling at 65 mph [105 km/h]).
- Revving the engine before turning it off may reduce fuel economy.
- Using the air conditioner or defroster may reduce fuel economy.
- You may want to turn off the speed control in hilly terrain if unnecessary shifting between the top gears occurs. Unnecessary shifting of this type could result in reduced fuel economy.
- Warming up a vehicle on cold mornings is not required and may reduce fuel economy.
- Resting your foot on the brake pedal while driving may reduce fuel economy.
- Combine errands and minimize stop-and-go driving.

Maintenance

- Keep tires properly inflated and use only recommended size.
- Operating a vehicle with the wheels out of alignment will reduce fuel economy.
- Use recommended engine oil. Refer to *Maintenance product specifications and capacities* in this chapter.

Maintenance and Specifications

- Perform all regularly scheduled maintenance items. Follow the recommended maintenance schedule and owner maintenance checks found in *scheduled maintenance information*.

Conditions

- Heavily loading a vehicle or towing a trailer may reduce fuel economy at any speed.
- Carrying unnecessary weight may reduce fuel economy (approximately 1 mpg [0.4 km/L] is lost for every 400 lb [180 kg] of weight carried).
- Adding certain accessories to your vehicle (for example bug deflectors, rollbars/light bars, running boards, ski/luggage racks) may reduce fuel economy.
- Using fuel blended with alcohol may lower fuel economy.
- Fuel economy may decrease with lower temperatures during the first 8–10 miles (12–16 km) of driving.
- Driving on flat terrain offers improved fuel economy as compared to driving on hilly terrain.
- Transmissions give their best fuel economy when operated in the top cruise gear and with steady pressure on the gas pedal.
- Close windows for high speed driving.

EPA fuel economy estimates

Every new vehicle should have a window sticker containing EPA fuel economy estimates. Contact your authorized dealer if the window sticker is not supplied with your vehicle. The EPA fuel economy estimates should be your guide for the fuel economy comparisons with other vehicles. Your fuel economy may vary depending upon the method of operation and conditions.

Note: Vehicles over 8,500 GVW (Gross Vehicle Weight) will not have fuel economy information printed on the window sticker.

EMISSION CONTROL SYSTEM

Your vehicle is equipped with various emission control components and a catalytic converter which will enable your vehicle to comply with applicable exhaust emission standards. To make sure that the catalytic converter and other emission control components continue to work properly:

- Use only the specified fuel listed.
- Avoid running out of fuel.

Maintenance and Specifications

- Do not turn off the ignition while your vehicle is moving, especially at high speeds.
- Have the items listed in *scheduled maintenance information* performed according to the specified schedule.

The scheduled maintenance items listed in *scheduled maintenance information* are essential to the life and performance of your vehicle and to its emissions system.

If other than Ford, Motorcraft or Ford-authorized parts are used for maintenance replacements or for service of components affecting emission control, such non-Ford parts should be equivalent to genuine Ford Motor Company parts in performance and durability.



WARNING: Do not park, idle, or drive your vehicle in dry grass or other dry ground cover. The emission system heats up the engine compartment and exhaust system, which can start a fire.

Illumination of the *Service engine soon* light, charging system warning light or the temperature warning light, fluid leaks, strange odors, smoke or loss of engine power, could indicate that the emission control system is not working properly.

An improperly operating or damaged exhaust system may allow exhaust to enter the vehicle. Have a damaged or improperly operating exhaust system inspected and repaired immediately.



WARNING: Exhaust leaks may result in entry of harmful and potentially lethal fumes into the passenger compartment.

Do not make any unauthorized changes to your vehicle or engine. By law, vehicle owners and anyone who manufactures, repairs, services, sells, leases, trades vehicles, or supervises a fleet of vehicles are not permitted to intentionally remove an emission control device or prevent it from working. Information about your vehicle's emission system is on the Vehicle Emission Control Information Decal located on or near the engine. This decal also lists engine displacement.

Please consult your *Warranty Guide/Customer Information Guide* for complete emission warranty information.

Maintenance and Specifications

Readiness for Inspection/Maintenance (I/M) testing

Some state/provincial and local governments may have Inspection/Maintenance (I/M) programs to inspect the emission control equipment on your vehicle. Failure to pass this inspection could prevent you from getting a vehicle registration. Your vehicle may not pass the I/M test if the *Service engine soon*  indicator is on or not working properly (bulb is burned out), or if the OBD-II system has determined that some of the emission control systems have not been properly checked. In this case, the vehicle is considered not ready for I/M testing.

If the *Service engine soon*  indicator is on or the bulb does not work, the vehicle may need to be serviced. Refer to the On board diagnostics (OBD-II) description in this chapter.

If the vehicle's engine or transmission has just been serviced, or the battery has recently run down or been replaced, the OBD-II system may indicate that the vehicle is not ready for I/M testing. To determine if the vehicle is ready for I/M testing, turn the ignition key to the on position for 15 seconds without cranking the engine. If the *Service engine soon*  indicator blinks eight times, it means that the vehicle is not ready for I/M testing; if the *Service engine soon*  indicator stays on solid, it means that the vehicle is ready for I/M testing.

The OBD-II system is designed to check the emission control system during normal driving. A complete check may take several days. If the vehicle is not ready for I/M testing, the following driving cycle consisting of mixed city and highway driving may be performed:

15 minutes of steady driving on an expressway/highway followed by 20 minutes of stop-and-go driving with at least four 30-second idle periods.

Allow the vehicle to sit for at least eight hours without starting the engine. Then, start the engine and complete the above driving cycle. The engine must warm up to its normal operating temperature. Once started, do not turn off the engine until the above driving cycle is complete. If the vehicle is still not ready for I/M testing, the above driving cycle will have to be repeated.

Maintenance and Specifications

On board diagnostics (OBD-II)

Your vehicle is equipped with a computer that monitors the engine's emission control system. This system is commonly known as the On Board Diagnostics System (OBD-II). The OBD-II system protects the environment by ensuring that your vehicle continues to meet government emission standards. The OBD-II system also assists your authorized dealer in properly servicing your vehicle. When the *Service engine soon*  indicator illuminates, the OBD-II system has detected a malfunction. Temporary malfunctions may cause the *Service engine soon*  indicator to illuminate. Examples are:

1. The vehicle has run out of fuel—the engine may misfire or run poorly.
2. Poor fuel quality or water in the fuel—the engine may misfire or run poorly.
3. The fuel cap may not have been securely tightened. See *Fuel filler cap* in this chapter.
4. Driving through deep water—the electrical system may be wet.

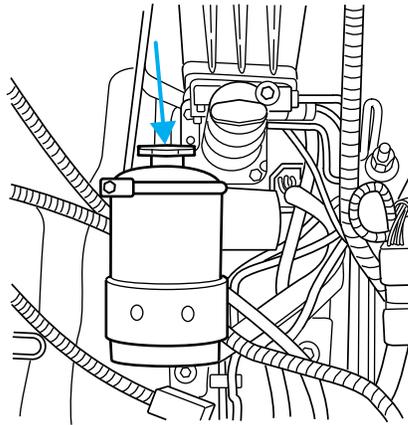
These temporary malfunctions can be corrected by filling the fuel tank with good quality fuel, properly tightening the fuel cap or letting the electrical system dry out. After three driving cycles without these or any other temporary malfunctions present, the *Service engine soon*  indicator should stay off the next time the engine is started. A driving cycle consists of a cold engine startup followed by mixed city/highway driving. No additional vehicle service is required.

If the *Service engine soon*  indicator remains on, have your vehicle serviced at the first available opportunity. Although some malfunctions detected by the OBD-II may not have symptoms that are apparent, continued driving with the *Service engine soon*  indicator on can result in increased emissions, lower fuel economy, reduced engine and transmission smoothness, and lead to more costly repairs.

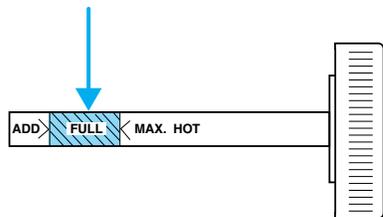
Maintenance and Specifications

POWER STEERING FLUID

Check the power steering fluid.
Refer to *scheduled maintenance information* for the service interval schedules.



1. Start the engine and let it run until it reaches normal operating temperature (the engine coolant temperature gauge indicator will be near the center of the normal area between H and C).
2. While the engine idles, turn the steering wheel left and right several times.
3. Turn the engine off.
4. Check the fluid level on the dipstick. It should be between the arrows in the FULL range on the side of the dipstick with the words MAX. HOT at the top. Do not add fluid if the level is within this range.



5. If the fluid is low, add fluid in small amounts, continuously checking the level until it reaches the FULL range. Be sure to put the dipstick back in the reservoir.

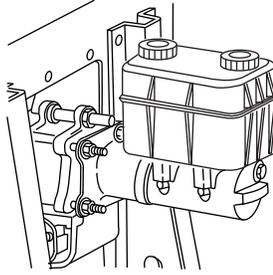
Refer to *Maintenance product specifications and capacities* in this chapter for the proper fluid type.

Maintenance and Specifications

BRAKE FLUID

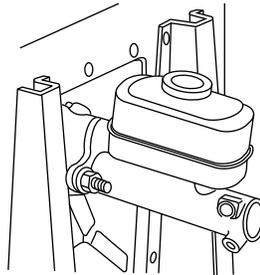
Brake fluid should be checked and refilled as needed. Seek service from your authorized dealer. Refer to the *scheduled maintenance information* for the service interval schedules.

- **Hydromax** brake fluid reservoir



Chassis with Gross Vehicle Weight Ratings of 20,500 lb (9,299 kg), 22,000 lb (9,979 kg), 24,000 lb (10,886 kg) and 26,000 lb (11,793 kg) are equipped with Hydromax Brake Booster Systems and must use Motorcraft Super DOT 4 Motor Vehicle Brake Fluid or equivalent meeting Ford Specification ESD-M6C57-A. Refer to *Maintenance product specifications and capacities* in this chapter.

- **Hydroboost** brake fluid reservoir



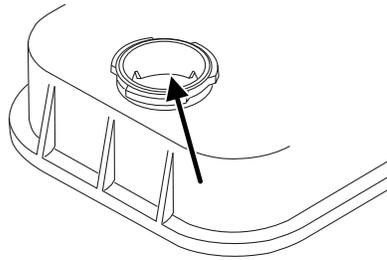
Chassis with Gross Vehicle Weight Ratings of 16,000 lb (7,257 kg) and 18,000 lb (8,165 kg) are equipped with Hydroboost Brake Booster Systems and must use Motorcraft High Performance DOT 3 Motor Vehicle Brake Fluid or equivalent meeting Ford Specification WSS-M6C62-A. Refer to *Maintenance product specifications and capacities* in this chapter.

Note: On Hydromax brake systems a clear gel-like substance in the hydraulic brake master cylinder reservoir may appear on some vehicles. This substance is a silicone base lubricant used during assembly of the master cylinder. It will float on top of the brake hydraulic fluid in the

Maintenance and Specifications

master cylinder. This condition is normal and in no way affects the operation of the brake system. It does not require any service.

1. Clean the reservoir cap before removal to prevent dirt or water from entering the reservoir.
 2. Visually inspect the fluid level.
 3. If necessary, add brake fluid from a clean un-opened container until the level reaches MAX (Hydroboost system only). Do not fill above this line.
- For vehicles with the Hydromax brake system, add fluid to the FILL TO BOTTOM OF RINGS mark located at the top of the reservoir. Do not fill above this line.



4. Use only a brake fluid listed previously (DOT 3 or Super DOT 4 depending on brake system) and that is certified to meet Ford specifications. Refer to *Maintenance product specifications and capacities* in this chapter.



WARNING: Carefully read cautionary information on product label. For MEDICAL EMERGENCY INFORMATION contact a physician or Poison Control Center immediately; on Ford-Motorcraft products call: 1-800-959-3673 (FORD). Failure to follow these instructions may result in personal injury.



WARNING: Use of any brake fluid other than that indicated for your brake system will cause permanent damage.



WARNING: Do not let the reservoir for the master cylinder run dry. This may cause the brakes to fail.

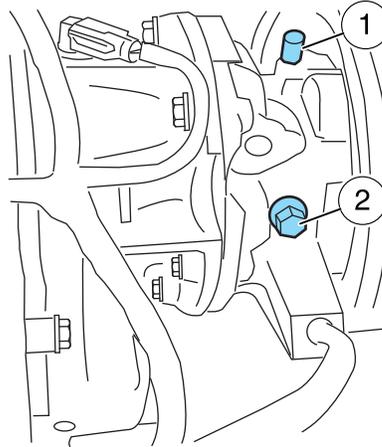
Brake system fluid should be replaced on a regular basis to maintain optimum braking performance, especially under heavy-duty driving conditions such as frequent steep grades or heavy towing loads. Refer to *scheduled maintenance information* for the service interval schedules.

Maintenance and Specifications

Parking brake fluid

Check and, if necessary, fill the parking brake assembly to the bottom of the filler plug hole (2) (located on the driver side of the transmission). Refer to *Maintenance product specifications and capacities* in this chapter for the proper fluid type.

Note: Do not fill the parking brake through the vent plug (1) (located on top of the transmission).



TRANSMISSION FLUID

Checking automatic transmission fluid

Refer to your *scheduled maintenance information* for scheduled intervals for fluid checks and changes. Your transmission does not consume fluid. However, the fluid level should be checked if the transmission is not working properly, i.e., if the transmission slips or shifts slowly or if you notice some sign of fluid leakage.

Automatic transmission fluid expands when warmed. To obtain an accurate fluid check, drive the vehicle until it is at normal operating temperature (approximately 20 miles [30 km]). If your vehicle has been operated for an extended period at high speeds, in city traffic during hot weather or pulling a trailer, the vehicle should be turned off for about 30 minutes to allow fluid to cool to normal operating temperature 150°F - 170°F (66°C - 77°C) before checking.

1. Drive the vehicle 20 miles (30 km) or until it reaches normal operating temperature.
2. Park the vehicle on a level surface and engage the parking brake.
3. With the parking brake engaged and your foot on the brake pedal, start the engine and move the gearshift lever through all of the gear ranges. Allow sufficient time for each gear to engage.

Maintenance and Specifications

4. Latch the gearshift lever in P (Park) and leave the engine running.
5. Remove the dipstick, wiping it clean with a clean, dry lint free rag. If necessary, refer to *Identifying components in the engine compartment* in this chapter for the location of the dipstick.
6. Install the dipstick making sure it is fully seated in the filler tube.
7. Remove the dipstick and inspect the fluid level. The fluid should be in the designated area for normal operating temperature or ambient temperature.

Low fluid level

Do not drive the vehicle if the fluid level is at the bottom of the dipstick and the ambient temperature is above 50°F (10°C).

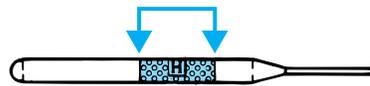


Correct fluid level

The transmission fluid should be checked at normal operating temperature 150°F-170°F (66°C-77°C) on a level surface. The normal operating temperature can be reached after approximately 20 miles (30 km) of driving.

You can check the fluid without driving if the ambient temperature is above 50°F (10°C). However, if fluid is added at this time, an overfill condition could result when the vehicle reaches normal operating temperature.

The transmission fluid should be in this range if at normal operating temperature (150°F-170°F [66°C-77°C]).



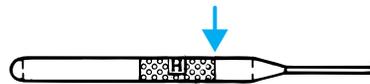
The transmission fluid should be in this range if at ambient temperature (50°F-95°F [10°C-35°C]).



High fluid level

Fluid levels above the safe range may result in transmission failure. An overfill condition of transmission fluid may cause shift and/or engagement concerns and/or possible damage.

High fluid levels can be caused by an overheating condition.



Maintenance and Specifications

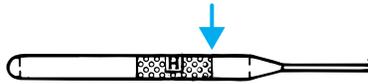
Adjusting automatic transmission fluid levels

Before adding any fluid, make sure the correct type is used. The type of fluid used is normally indicated on the dipstick and also in the *Maintenance product specifications and capacities* section in this chapter.

Use of a non-approved automatic transmission fluid may cause internal transmission component damage.

If necessary, add fluid in 1/2 pint (250 ml) increments through the filler tube until the level is correct.

If an overfill occurs, excess fluid should be removed by an authorized dealer.



An overfill condition of transmission fluid may cause shift and/or engagement concerns and/or possible damage.

Do not use supplemental transmission fluid additives, treatments or cleaning agents. The use of these materials may affect transmission operation and result in damage to internal transmission components.

Automatic transmission fluid filter

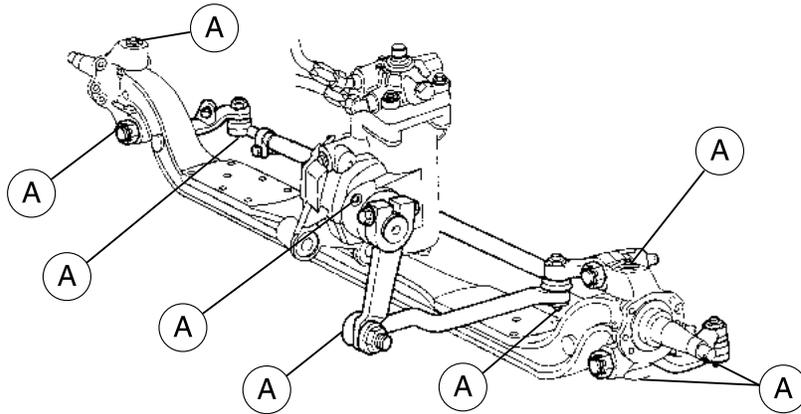
The Torqshift automatic transmission is equipped with a serviceable transmission fluid filter located inside the transmission bottom pan.

Refer to *scheduled maintenance information* for service intervals for automatic transmission fluid and transmission filter.

For transmission filter maintenance, see your authorized dealer.

Maintenance and Specifications

STEERING LINKAGE LUBRICATION POINTS



There are nine lubrication points on the steering linkage shown as “A”. Refer to *Maintenance product specifications and capacities* in this chapter for lubricant type to use.

AIR FILTER

Refer to *scheduled maintenance information* for the appropriate intervals for changing the air filter element.

When changing the air filter element, use only the Motorcraft air filter element listed. Refer to *Motorcraft part numbers* in this chapter.

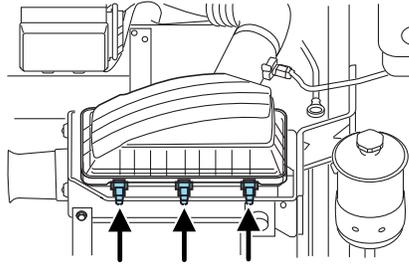


WARNING: To reduce the risk of vehicle damage and/or personal burn injuries do not start your engine with the air cleaner removed and do not remove it while the engine is running.

Maintenance and Specifications

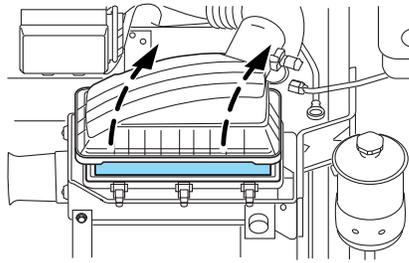
Changing the air filter element

1. Loosen the latches that secure the air filter cover in place.



2. Carefully separate the two halves of the air filter housing.

3. Remove the air filter element from the housing.



4. Install a new air filter element. Be careful not to crimp the filter element edges between the air filter housing. This could cause filter damage and allow un-metered air to enter the engine if not properly seated.

5. Replace the air filter cover to the housing and secure the latches.

Maintenance and Specifications

MOTORCRAFT PART NUMBERS

Component	6.8L V10 engine
Air filter element	FA-1782
Battery	BXT-65-750
Fuel filter	FG-872
Oil filter	FL-820-S
Spark plugs	*
Transmission fluid filter	FT-180

*For spark plug replacement, see your authorized dealer. Refer to *scheduled maintenance information* for the appropriate intervals for changing the spark plugs.

Replace the spark plugs with ones that meet Ford material and design specifications for your vehicle, such as Motorcraft or equivalent replacement parts. The customer warranty may be void for any damage to the engine if such spark plugs are not used.

Maintenance and Specifications

MAINTENANCE PRODUCT SPECIFICATIONS AND CAPACITIES

Item	Capacity	Ford Part Name	Ford Part Number / Ford Specification
Brake fluid-Hydroboost brake booster system—Chassis with Gross Vehicle Weight Ratings of 16,000 lb (7,257 kg) and 18,000 lb (8,165 kg)	Between MIN and MAX on reservoir	Motorcraft High Performance DOT 3 Motor Vehicle Brake Fluid	PM-1-C / WSS-M6C62-A or WSS-M6C65-A1
Brake fluid-Hydromax brake booster system—Chassis with Gross Vehicle Weight Ratings of 20,500 lb (9,299 kg), 22,000 lb (9,979 kg), 24,000 lb (10,886 kg) and 26,000 lb (11793 kg)		Super DOT 4 Motor Vehicle Brake Fluid	YS4Z-19542-AA / ESD-M6C57-A or WSS-M6C65-A2

Maintenance and Specifications

Item	Capacity	Ford Part Name	Ford Part Number / Ford Specification
Engine coolant	30.6 quarts (29.0L) ¹	Motorcraft Premium Gold Engine Coolant with bittering agent (yellow-colored) ²	VC-7-B / WSS-M97B51-A1
Cooling system stop leak pellets	—	Motorcraft Cooling System Stop Leak Pellets	VC-6 / WSS-M99B37-B6
Engine oil	6.0 quarts (5.7L)	Motorcraft SAE 5W-20 Premium Synthetic Blend Motor Oil (US) Motorcraft SAE 5W-20 Super Premium Motor Oil (Canada)	XO-5W20-QSP (US) CXO-5W20-LSP12 (Canada) / WSS-M2C930-A with API Certification Mark
Automatic transmission Torqshift 5-speed	18.2 quarts (17.2L) ³	Motorcraft MERCON® LV ATF ⁴	XT-10-QLV / MERCON® LV WSS-M2C938-A
Power steering fluid	Keep in FULL range on dipstick	Motorcraft MERCON® V ATF	XT-5-QM / MERCON® V
Parking brake assembly	Fill to bottom of fill plug hole		
Rear Axle Dana 80	4.0 quarts (3.9L) ⁵	Motorcraft SAE 75W-140 Synthetic Rear Axle Lubricant	XY-75W140-QL / WSL-M2C192-A and GL-5

Maintenance and Specifications

Item	Capacity	Ford Part Name	Ford Part Number / Ford Specification
Rear Axle Dana S110	7.0 quarts (6.6L) ⁶	Motorcraft SAE 75W-140 Synthetic Rear Axle Lubricant	XY-75W140-QL / WSL-M2C192-A and GL-5
Rear Axle Dana S130	7.0 quarts (6.6L) ⁵	Motorcraft SAE 75W-140 Synthetic Rear Axle Lubricant	XY-75W140-QL / WSL-M2C192-A and GL-5
Rear Axle Dana Spicer 17060S	16.0 quarts (15.1L)	Motorcraft SAE 75W-140 Synthetic Rear Axle Lubricant	XY-75W140-QL / WSL-M2C192-A and GL-5
Transmission /steering/parking brake linkages and pivots, brake and clutch pedal shaft (if equipped)	—	Premium Long-Life Grease	XG-1-C / ESA-M1C75-B
Fuel tank	75.0 gallons (284.0L)	—	—

¹Capacity is approximate and will vary due to second-stage manufacturer completion of HVAC system. Fill to the Cold Fill Level on reservoir.

²Add the coolant type originally equipped in your vehicle.

³Indicates only approximate dry-fill capacity. Some applications may vary based on cooler size and if equipped with in-tank cooler. The amount of transmission fluid and fluid level should be set by the indication on the dipstick's normal operating range.

⁴Automatic transmissions that require MERCON® LV should only use MERCON® LV fluid. Refer to *scheduled maintenance information* to determine the correct service interval. Use of any fluid other than the recommended fluid may cause transmission damage.

⁵Fill 1/4 inch to 9/16 inch (6 mm to 14 mm) below bottom of fill hole.

Maintenance and Specifications

Your vehicle's rear axle is filled with a synthetic rear axle lubricant and is considered lubricated for life. These lubricants do not need to be checked or changed unless a leak is suspected, service is required or the axle assembly has been submerged in water. The axle lubricant should be changed any time the rear axle has been submerged in water.

⁶Fill 1/4 inch to 9/16 inch (6 mm to 14 mm) below bottom of fill hole.

ENGINE DATA

Engine	6.8L V10 engine
Cubic inches	415
Required fuel	87 octane
Firing order	1-6-5-10-2-7-3-8-4-9
Ignition system	Coil on plug
Spark plug gap	0.039-0.043 inch (1.00-1.10mm)
Compression ratio	9.2:1

IDENTIFYING YOUR VEHICLE

Certification label for incomplete vehicles

On completed derivations of incomplete vehicles, the certification label is affixed at a location determined by a subsequent stage manufacturer of the completed vehicle. In these cases the completed vehicle is manufactured in two or more stages by two or more separate manufacturers.

Vehicle Identification Number

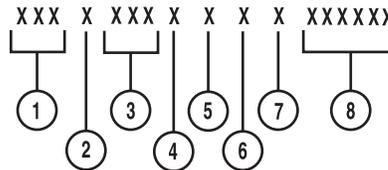
The vehicle identification number is located near the cowl to the right of the air filter.

If you ever find it necessary to communicate with Ford Motor Company about your vehicle, always include the VIN in your communication.

Maintenance and Specifications

The Vehicle Identification Number (VIN) contains the following information:

1. World manufacturer identifier
2. Brake system / Gross Vehicle Weight Rating (GVWR) / Restraint System
3. Vehicle line, series, body type
4. Engine type
5. Check digit
6. Model year
7. Assembly plant
8. Production sequence number



TRANSMISSION CODE DESIGNATIONS

You can find a transmission code on the Safety Compliance Certification Label. The following table tells you which transmission each code represents.

MFD. BY FORD MOTOR CO.

DATE: XX/XX GVWR: XXXXLB/ XXXXKG
 FRONT GAWR: XXXXL REAR GAWR: XXXXLB
 XXXXKG WITH XXXXKG WITH
 XXXX/XXXXXXXXX TIRES: XXXX/XXXXXXXXX TIRES
 XXXX.XX RIMS: XXXX.XX RIMS
 AT XXX kPa/XX PSI COLD AT XXX kPa/XX PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.

VIN: XXXXXXXXXXXXXXXXXXXX XXXXX
 TYPE: XXX XXXXX

EXT PNT: XX RC: XX DSO: XXXXX
 WB¹ BRK¹ INT TR¹ TP/PS¹ R¹ AXLE¹ TR¹ SPR¹ XXXXX
 XXX X XX X XX X XX XXX

XXXXXXXXXXXX XX XXXX-XXXXXX-XX

Description	Code
Five-speed automatic, TorqShift	T

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